A STUDY OF EFFICACY OF INTRAMUSCULAR INJECTION TRAMADOL AS LABOUR ANALGESIC AND LABOUR ACCELERATOR IN 400 PRIMIGRAVIDA PATIENTS IN LATENT PHASE OF FIRST STAGE OF LABOUR

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BONAFIDE CERTIFICATE

This is to certify that this dissertation is the bonafide work of Dr.MUTHULAKSHMI.N on ‘‘**A STUDY OF EFFICACY OF INTRAMUSCULAR INJECTION TRAMADOL AS LABOUR ANALGESIC AND LABOUR ACCELERATOR IN 400 PRIMIGRAVIDA PATIENTS IN LATENT PHASE OF FIRST STAGE OF LABOUR”** during her M.S.,(Obstetrics and Gynaecology) course from April 2011 to April 2014 at the Government Stanley medical college and Raja Sir Ramasamy Mudaliar Lying-in Hospital,Chennai.

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DECLARATION

I, Dr. MUTHULAKSHMI.N solemnly declare that the dissertation ‘‘**A STUDY OF EFFICACY OF INTRAMUSCULAR INJECTION TRAMADOL AS LABOUR ANALGESIC AND LABOUR ACCELERATOR IN 400 PRIMIGRAVIDA PATIENTS IN LATENT PHASE OF FIRST STAGE OF LABOUR”** is a bona fide work done by me at Government R.S.R.M Lying in Hospital, under supervision and guidance of **Prof. Dr. V. KALAIVANI, M.D., DGO** in Department of Obstetrics and Gynaecology, Government Stanley Medical College, Chennai.

This thesis is submitted to The Tamil Nadu Dr .M.G.R. Medical University in partial fulfilment of the rules and regulations for the M.S. degree examinations in Obstetrics and Gynaecology to be held in April 2014.

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CONTENTS

INTRODUCTION

The birth of the first baby, the culmination of the first pregnancy signifies a momentous occasion in the life of every woman. The aim of modern management of labour should be to ensure optimum condition for the mother and the fetus during and after delivery and to render emotional support and satisfaction. It involves general care and support of the mother, monitoring the condition of the foetus and progress of labour; so as to anticipate, recognize problem that endangers the life of both mother and baby.

Labour pain is due to physiological, psychological, excitatory as well as inhibitory complex interactions. Labour pain exceeds the women's ante partum expectation. It may affect cardiovascular, respiratory, urinary, gastro intestinal, neuro endocrine functions due to supra segmental and segmental reflexes. It also decreases 25% of utero placental blood flow and causes altered fetal homeostasis.

Painless short labour is usually preferred by every mother and has been a primary concern of an obstetrician and it has a positive influence on the course of labour. Thus obstetrical analgesia becomes an essential

part of modern obstetrics. Various methods of obstetrical analgesia are available.

Epidural analgesia has been popularly used for pain relief in western countries for nearly three decades. In India its use is limited due to lack of trained staff, awareness and monitoring facilities.

Inhalational Entonox contains 50%Nitrous Oxide+50%Oxygen also used as labour analgesia. It has many advantages like rapid reversibility, patient controlled system, less possibility of over dosage and higher oxygen delivery to foetus. It's disadvantage is the need for Anesthesiologists. So, it could not be used in smaller hospitals.

Because of convenience of administration, faster absorption as compared to the oral route IM Tramadol hydrochloride was used for the study. Tramadol is a weak opioid agent inhibits noradrenergic and serotonergic neurotransmission and has analgesic activity.

Tramadol allays sympathetic anxiety. It also inhibits type III Muscarinic Receptors. M-3 Receptor antagonism causes inhibition of gastric gland secretion and relaxation of smooth muscle. Thus, it reduces the duration of labour also.

In the present study the merits, demerits and outcome of IM Tramadol hydrochloride as labour analgesic and labour accelerator and the effect of the drug in both the mother and baby is evaluated.

REVIEW OF LITERATURE

Labour is the physiologic process by which a foetus is expelled from the uterus to the outside world. Normal labour is a series of events which results in expulsion of products of conception at or near term via naturalis of spontaneous onset for a singleton vertex presentation within 24 hours resulting in a healthy mother and a healthy baby[1].

The experience of labour pain has individual variation. Severe pain is present in nulliparous women than multiparous women. Lowe (2002) emphasized that the experience of labour pain is a highly individual reflection of variable stimuli that are uniquely received and interpreted by each women individually[2].

Excessive sympathetic activity will cause incoordinate uterine contractions, prolonged labour and fetal heart rate abnormalities. Labour pain may cause subsequent infertility and post traumatic stress disorder. Risk of postnatal depression is higher in women who have had no pain relief compared to those with effective analgesia. Hence, most women request analgesia to overcome labour pains[2].

According to MELZACK 60 to 80%of women had severe labour pains, about 23% of primiparous and 11% multiparous women had horrible labour pain[2].

HISTORICAL ASPECTS OF LABOUR ANALGESIA

In 1847, Ether was introduced as first obstetrical anaesthetic agent by James Young Simpson[4]. In 1853, Chloroform was used as an anaesthetic agent by John Snow in Queen Victoria's 8th child birth. In 1881, Nitrous Oxide was used for labour pains by Stanistav Kilkovitch in Russia.

In 1902, Hyoscine and morphine were used in labour. In 1908, Emilfisher and Vommering introduced Barbiturates. In 1912, Phenobarbitone was used. In 1940 parenteral administration of pethidine was used. In 1971, Clark used the opioid antagonist naloxone.

Regarding regional techniques Dr.Mueller introduced the first Pudental block technique (Figure-1). In 1926, Gelut introduced the first Para-cervical block. The first Lumbar sympathetic block was given by Dellapiane in 1927. In 1931, continuous Lumbo aortic plexus and caudal blocks in labour were described by Romanian obstetrician Eugen Begdan Aburel. The first Epidural block was given by Graffignino in 1935. In 1946, the first continuous Epidural analgesia was given by Flower et al.

In 1949, continuous lumbar epidural block in labour was described by Cleland.

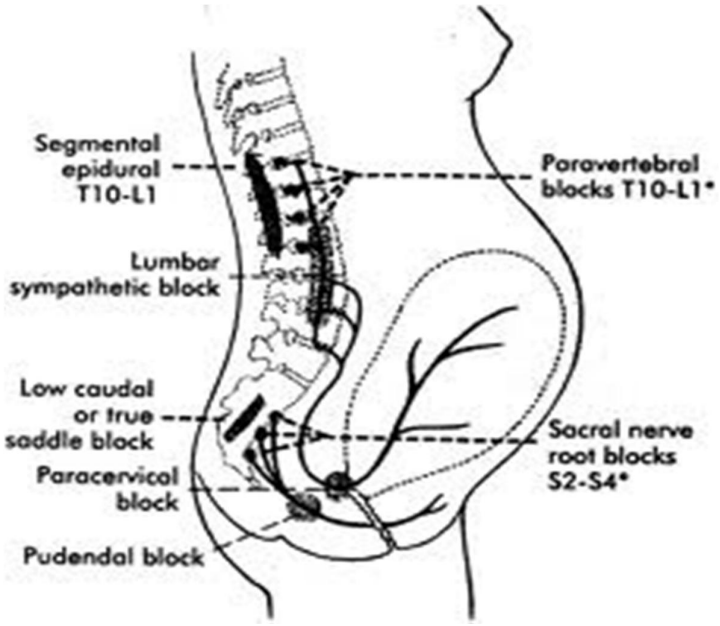


FIGURE -1

In 1945, the syndrome of acid aspiration was described by Curtis Mendel son, in Caesarean section under general anaesthesia. In 1958, Ferdinand Lamaze said that labour pain is due to uterine contractions and it is a conditioned reflex and it could be reduced by psycho prophylaxis.

PHYSIOLOGY OF PAIN

Pain is an unpleasant emotional and sensory experience and it is due to tissue damage. The pain response is variable among persons.

Pain is divided into two types,

I. Acute pain

II. Chronic pain

I. ACUTE PAIN

Acute pain is present over the affected area and it is present for few minutes. It will produce fight or flight response by means of stimulating sympathetic nervous system. It will produce increase in respiratory rate, heart rate, sweating, restlessness, apprehension &dilated pupils. Acute pain is divided into three types[5].

A. Somatic pain

B. Visceral pain

c. Referred pain

IA. Somatic pain

It is again divided into superficial &deep somatic pain.

Superficial somatic pain:

This pain is well localised pricking, throbbing, sharp or burning in character. It arises from skin, mucous membrane and tissues.

Deep somatic pain:

It is less well localised, dull aching in nature and arises from tendons, joints, muscles or bones.

I B Visceral pain

It arises from internal organs or its coverings like pericardium, peritoneum and parietal pleura.

True visceral pain:

It is diffuse, dull and usually in midline. It has association with abnormal parasympathetic or sympathetic activity and causes nausea, vomiting, changes in heart rate, blood pressure and sweating.

Parietal pain –localised:

It is confined to area around organ and it is sharp described as stabbing sensation.

IC Referred pain

It occurs with visceral pain. It is felt in an area away from the stimulus site. Because same spinal segment supplies the site of stimulus and the referred pain area.

II. CHRONIC PAIN

It is a prolonged pain .It will persist for long time beyond the normal healing time. It may present for 1 to 6 months. It may be neuropathic, nociceptive or mixed. It may be intermittent or continuous. It is poorly understood and it is more complex[6]. The management is difficult than acute pain.

In chronic pain, sympathetic nervous system will have adaptation to persistent pain impulses[7]. Hence there will not be any fight or flight reaction. There is evidence indicates that depression and chronic pain shares the same physiological pathway[8]. Hence Selective Serotonin Reuptake Inhibitors and Tri Cyclic Antidepressants have been used for chronic pain syndromes like neuropathic pain, fibromyalgia and low back pain[9, 10].

THEORIES OF PAIN CONDUCTION

I. Pain impulse

Based on the nerve fibre types that conduct pain sensation, pain has been classified as two distinct types.

A. Fast or First pain:

Aδ fibres rapidly transmit this pain. Aδ fibres are thick myelinated fibres that bring messages rapidly to the brain. This pain is opioid resistant. Free nerve endings present in the skin mediates this pain.

B. Slow or Second pain:

Unmyelinated, small C fibres transmit this pain. It brings longer term chronic and throbbing pain. It is relieved by both anti inflammatory analgesics and Opioids (Figure-2).Deep visceral tissues sense this pain and it outlasts provoking stimulus. It is secondary to inflammation or actual tissue damage.

Local anaesthetics block transmission of both types of pain in nerve fibres.

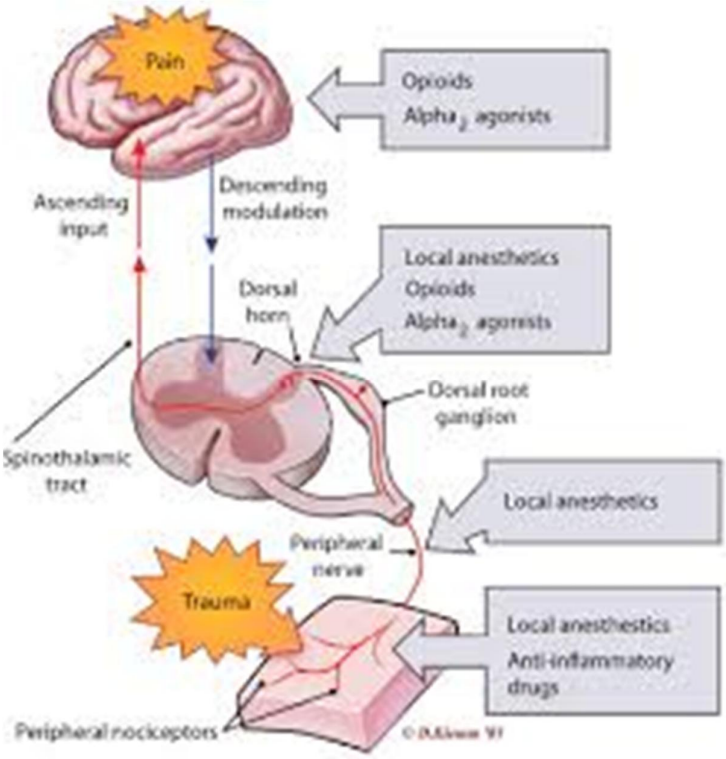


FIGURE-2

II. Pain pathways

Pain stimuli can be regulated at centres in peripheral nervous system. Pain impulses from Aδ and C fibres are received in lamina which is present in dorsal horn of the spinal cord.

Peripheral nerves consist of autonomic, sensory and motor nerve fibres which are arranged in bundles. Large diameter myelinated nerve fibres conduct impulses faster than small unmyelinated fibres. The myelin sheath acts as an insulating layer. Hence it increases the rate of pain impulse transmission.

The receptors at the free nerve endings initiate pain impulse. Painful stimuli are converted into changes in excitability of membranes. In case of pain the membrane excitability is mediated by prostaglandins, serotonin, bradykinin, acetylcholine, histamine, potassium ions, leukotrienes, substance P and free radicals like nitric oxide which are all released from damaged tissues (Figure-3).

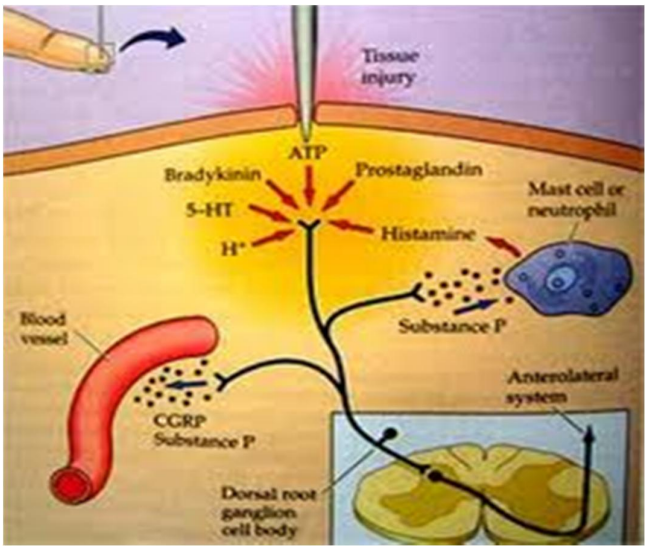


FIGURE-3

From the peripheral receptors painful impulses are conducted by Aδ and C fibres in peripheral nerves. First order sensory neuron cell bodies are located in dorsal nerve root ganglion. It has both centrally projecting and peripherally projecting axons. Centrally projecting axons synapses with second order neurons which are all situated in the dorsal

horn of the spinal cord. Peripherally projecting axons will become the peripheral nerves.

Rexed's 10 Lamina are present in grey matter of spinal cord. The dorsal horn of the spinal cord is made up of first six lamina(I to VI) which receives all afferent impulses and act as a site of modulation of pain by descending and ascending neural pathways.

The marginal layer, the substantia gelatinosa, the nucleus proprius are the other names for the Rexed Lamina I, II, IV and V.

Second order neurons that are dorsal horn neurons have both wide dynamic range neurons (WDR) and nociceptive specific neurons. Noxious stimuli are received by nociceptive specific neurons whereas non noxious afferent impulses are received by wide dynamic range neurons. The lamina V of dorsal horn responds to both non noxious and noxious sensory impulses. It receives both somatic and visceral pain afferent impulses.

The impulses from the second order neurons are carried by antero lateral spino thalamic tract which crosses the spinal cord and goes to opposite side at the level of anterior commissure. This antero lateral spino thalamic tract goes to the postero ventral nucleus of thalamus, the

peri aqueductal grey matter, the nucleus raphe magnus, the reticular formation and it synapses with third order neurons. Fibres from third order neuron go to somato sensory areas I and II which are located in post central gyrus of cerebral hemisphere[11].

LABOUR PAIN MECHANISM

In first stage of labour, perception of pain begins with nociceptive stimuli arises from mechanical and chemo receptors in cervix and uterus[11]. Contraction of the uterus generates intense pressure which stimulates high threshold mechanoreceptors[12]. In later stages repeated contraction produces myocellular injury which releases histamine, serotonin, bradykinin, substance P, potassium ions and acetylcholine which stimulates chemical nociceptors[13].

I. <u>Peripheral pathways</u>

a) First stage of labour or visceral component:

According to Bonica, afferents from cervix and lower uterine segment accompany the sympathetic nerves (T10-L1) and not the sacral nerves[14].

First stage of labour pain is due to stretching of the cervix and uterine contractions. It is visceral, diffuse, cramping in nature and poorly

localized. Aδ and C afferent fibres carry sensations which pass sequentially through superior, middle, inferior hypo gastric plexus, the lower thoracic and lumbar sympathetic chain and ends with T10-L1 spinal nerves (Figure-4). The visceral labour pain sensation is carried by Unmyelinated C fibres. It is relieved by anti inflammatory analgesics and opioid.

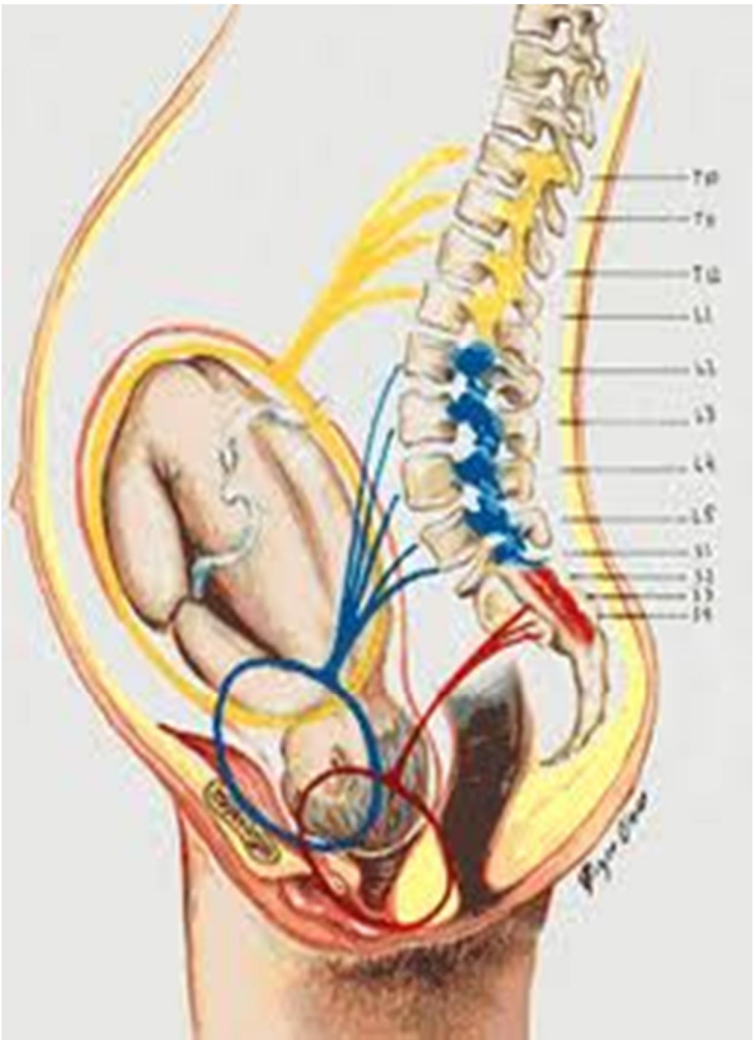


FIGURE-4

b) Second stage of labour or somatic component:

Somatic pain predominates during the second stage and late first stage of labour. It is due to traction and distension of the pelvic structures, the perineum and the pelvic floor. This somatic pain is carried through the pudendal nerve to the anterior rami of S2 to S4. It is well localized, sharp pain unlike first stage visceral pain (which is diffuse, poorly localized) due to quicker conduction velocity in sacral pathways. A δ fibre predominantly carries this pain[15]. Somatic nature second stage pain is best relieved by local anaesthetics.

In addition to vagina, vulva, perineum sensory innervations S2, S3, S4 spinal segments also gives motor innervations to various skeletal muscles of the perineum and pelvic floor. Posterior cutaneous nerve of thigh supplies lateral and posterior part of perineum. Ileo- inguinal nerve, genital branch of genito femoral nerve supplies the anterior part of perineum.

Afferents from the uterus including the lower uterine segment and the cervix is carried by accompanying sympathetic nerves to the spinal cord. The nerves, plexus, sympathetic chains that carry afferents are hypo gastric nerve, the superior and inferior hypo gastric plexus, the lower

thoracic and lumbar sympathetic chain. Finally these afferents goes to the T10 to L1 spinal nerves.

II. Central pathways

After entering into the spinal cord (CNS) the labour pain sensation travels through both the descending and ascending pathways.

a) Ascending pathways:

In the dorsal horn of spinal cord (Rexed Lamina I to VI) first synapse of the ascending pathway occurs. Initially the superficial substantia gelatinosa (Lamina I and II) are synapse by the most primary afferent neurons. Deeply located lamina V (WDR), Wide Dynamic Range neurons are synapse by the locally projecting interneuron. WDR neurons also receive excitatory input from the large myelinated Aδ afferents and Unmyelinated C nociceptive afferents.

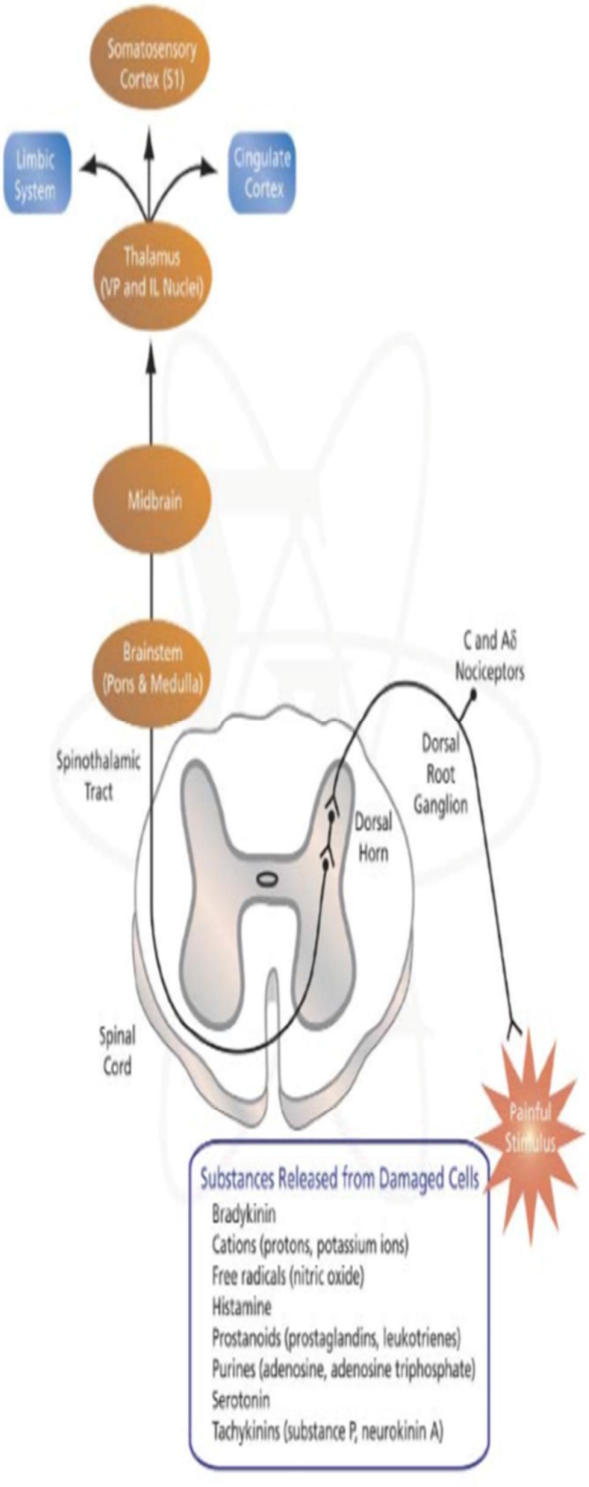
All of the Lamina V cells respond to high threshold visceral afferents and also to cutaneous low threshold afferents from the area of skin which is supplied by the same spinal segment. This phenomenon is important for referred pain. It occurs with uterine contraction. Thus cells of Lamina V provide the neural basis for **referred pain** phenomenon.

Dorsal horn grey matter projections cross to the contra lateral anterior white matter of the spinal cord and then to the limbic and hypothalamic systems where affective (Emotional) and autonomic responses originates[16].

a) Descending pathways:

It originates from the primary sensory cortex located in post central area of both cerebral hemispheres. It projects to the midbrain- peri aqueduct grey matter which further projects to the thalamus- postero ventral nucleus.

From the postero ventral nucleus of the thalamus, through the dorsi lateral funiculus projections enter the spinal cord and ends in the grey matter (Dorsal horn) of spinal cord[17].


Somatosensory Cortex (S1)
Limbic System
Cingulate Cortex
Thalamus (VP and IL Nuclei)
Midbrain
Brainstem (Pons & Medulla)
Spinothalamic Tract
C and Aδ Nociceptors
Dorsal Root Ganglion
Dorsal Horn
Spinal Cord
Painful Stimulus
Substances Released from Damaged Cells
Bradykinin
Cations (protons, potassium ions)
Free radicals (nitric oxide)
Histamine
Prostanoids (prostaglandins, leukotrienes)
Purines (adenosine, adenosine triphosphate)
Serotonin
Tachykinins (substance P, neurokinin A)

LABOUR PAIN CAUSES

Labour pain is caused by variety of noxious stimuli. It gives both objective alterations in autonomic nervous system and cardio-respiratory function and subjective discomfort.

- Hypoxia during Myometrial contraction

- Myometrial contraction produces hypoxia leads onto lower abdominal pain. The pain severity is increased if there is no uterine relaxation between contractions to allow adequate oxygenation. Uterine contractions and sympathetic hyperactivity causes vasoconstriction leads onto ischemia of the myometrium.

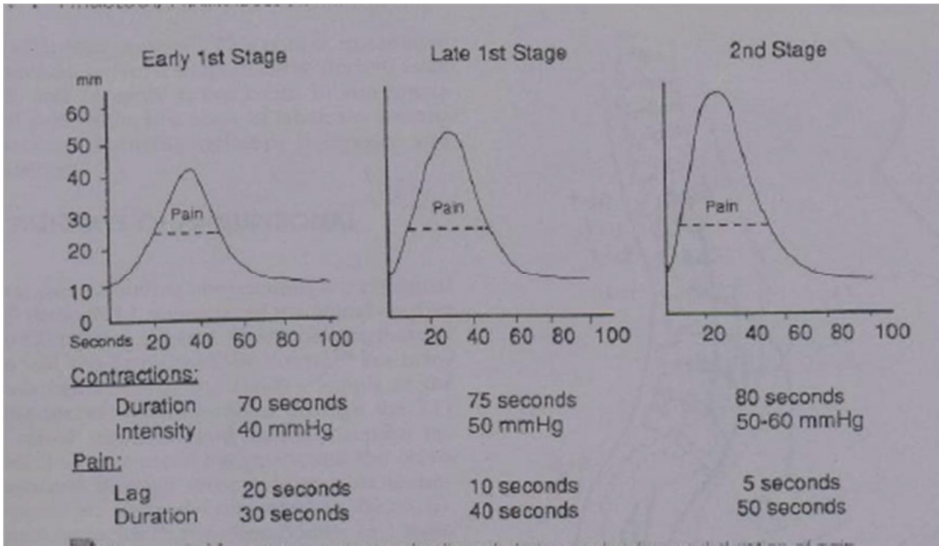


FIGURE - 5

Relationship between duration of lower abdominal pain due to increased intensity of uterine contractions and duration of uterine contractions is drawn in each stages of labour. **In early first stage**, to evoke pain the intensity of contraction should reach 25mm/hg[18]. There is a time lag of 20 seconds for pain perception (Fig-5). **In late first stage** of labour, the time lag for pain perception is shortened from 20 seconds to 10 seconds. The intensity of pain, the intensity of contraction and the duration of the contraction is increased. **In second stage** of labour, the time lag for pain is shortened to 5 seconds, the intensity and duration of contraction reaches a peak[14]. . Though the intensity of postpartum uterine contractions are less the magnitude is 2-3 times great[19].

- Uterine contraction also causes pressure on the afferent nerve endings which are located between the Myometrial fibres also causes lower abdominal pain.

- Cervix stretching produces pain in the low back area.

- Pressure on the Para cervical ganglia and ganglia surrounding the vagina produces pain.

- Traction on the ovaries, tubes and the peritoneum produces pain.

- Stretching and traction on the supporting ligaments.

- ❖ Pressure on the bladder, urethra and rectum.
- ❖ Distension of the perineum and the muscles of the pelvic floor also cause pain during the labour[20].

LABOUR PAIN EFFECTS

Labour pain has deleterious effect both on the foetus and mother[21]. The effect of labour pain are mediated at three levels

a) Cortical

b) Supra segmental

c) Segmental

I. Cortical level:

Cortical level impulses arise from somato sensory cortex and mediated through neo spino thalamic tract. It causes fear, anxiety, arousal, emotional, behavioural changes and motor activity changes.

I. Supra segmental level:

Connection of reticular formation with paleo spino thalamic tract mediates this impulse. It causes hyperventilation and increase in ACTH,

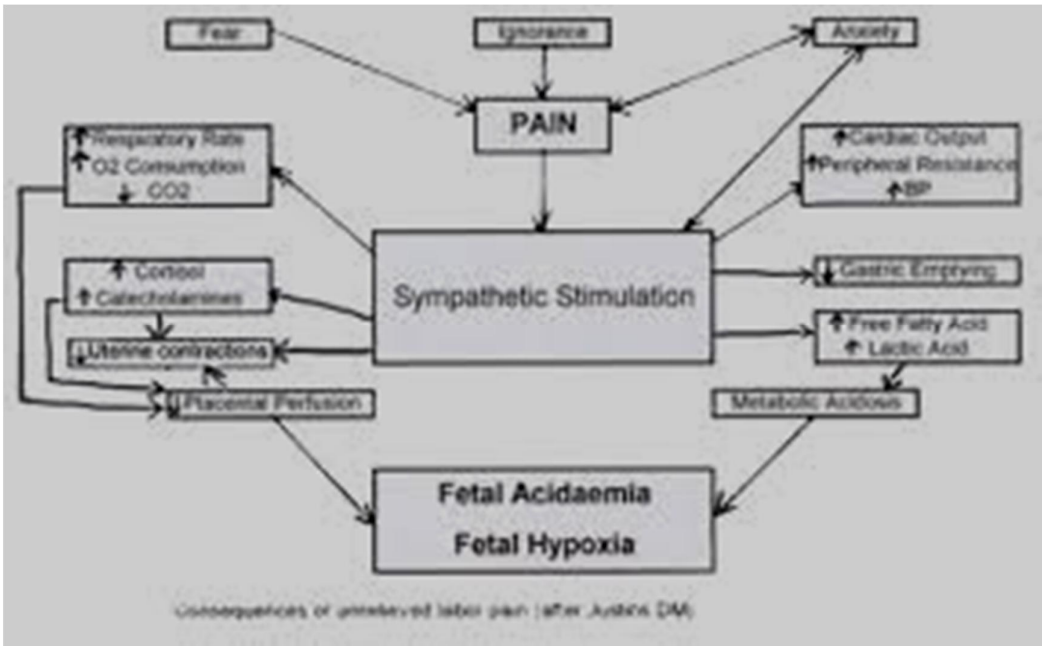


FIGURE-6

CONTRACTION PAIN	DELIVERY PAIN
Visceral	Somatic
Diffuse, poorly localized	Well localized, may follow distribution of somatic nerves
Dull, vague (may be colicky, cramping, squeezing)	Sharp, definite
Frequently referred; associated with internal factors	Not referred; associated with external factors
Delayed transmission	Rapid transmission
Related to intrauterine pressure	Related to perineal distention
Variable in intensity, often periodic, builds to peaks	Often constant, accompanied by urge to bear down
Often associated nausea, vomiting, sickening feeling	Nausea only with deep somatic pain
Evokes generalized autonomic response	Evokes circulatory changes secondary to intermittent Valsalva maneuvers
Very susceptible to central neural blockade	Less susceptible to central neural blockade

Aldosterone, Cortisol levels and also increases oxygen consumption (Figure-6). At or after delivery it reaches a peak[22].

Ventilation is increased from 10 litres per min (normal mean) between contractions to 23-35 litres per min during contractions. Tidal volume and minute volume is also increased.

II. Segmental level:

This effect is caused by local neuronal connection at the spinal cord. It causes delayed gastric emptying, decreased gastric motility, nausea, vomiting and ileus.

LABOUR PAIN CLINICAL CHARACTERISTICS

First stage labour pain (i.e., uterine contraction pain) clinical character is different from the second stage labour pain (i.e., delivery pain) suggested the presence of distinct neural pathways (Figure-7).

A. Early first stage- Latent phase:

Uterine contraction will produce aching, cramping, diffuse, visceral pain referred to low back area T11, T12 dermatome which receives afferents from both viscera and cutaneous dermatome.

B. Late first stage-Active phase:

Intensity of uterine contractions increases, severe pain occurs over T10-L1 spinal dermatome it is associated with dilation of cervix.

C. Early second stage:

Uterine contractions intensity increases and severe pain present in T10-L1 dermatomes. Descent of the presenting part of the foetus occur which causes pressure over the pelvic structures and moderate pain over low back area and perineum and mild pain over thighs and legs.

D. Late second stage-Delivery pain:

Descent of the presenting part of the foetus produces well localized severe, sharp, somatic pain over the lower part of sacrum, vagina, rectum and perineum which is supplied by pudendal nerve (S2, S3 and S4). Uterine contraction will produce moderate pain over T10-L1 segments.

Severe pain present over L2-S1(lower lumbar, sacral dermatome) due to pressure on lumbo sacral plexus and nerve roots, stretching of fascia, muscles, ligaments and due to traction on uterine ligaments, pelvic parietal peritoneum and due to pressure on the urethra, bladder and rectum[23].

INTENSITY AND DISTRIBUTION OF LABOUR PAIN

DURING EACH STAGES OF LABOUR

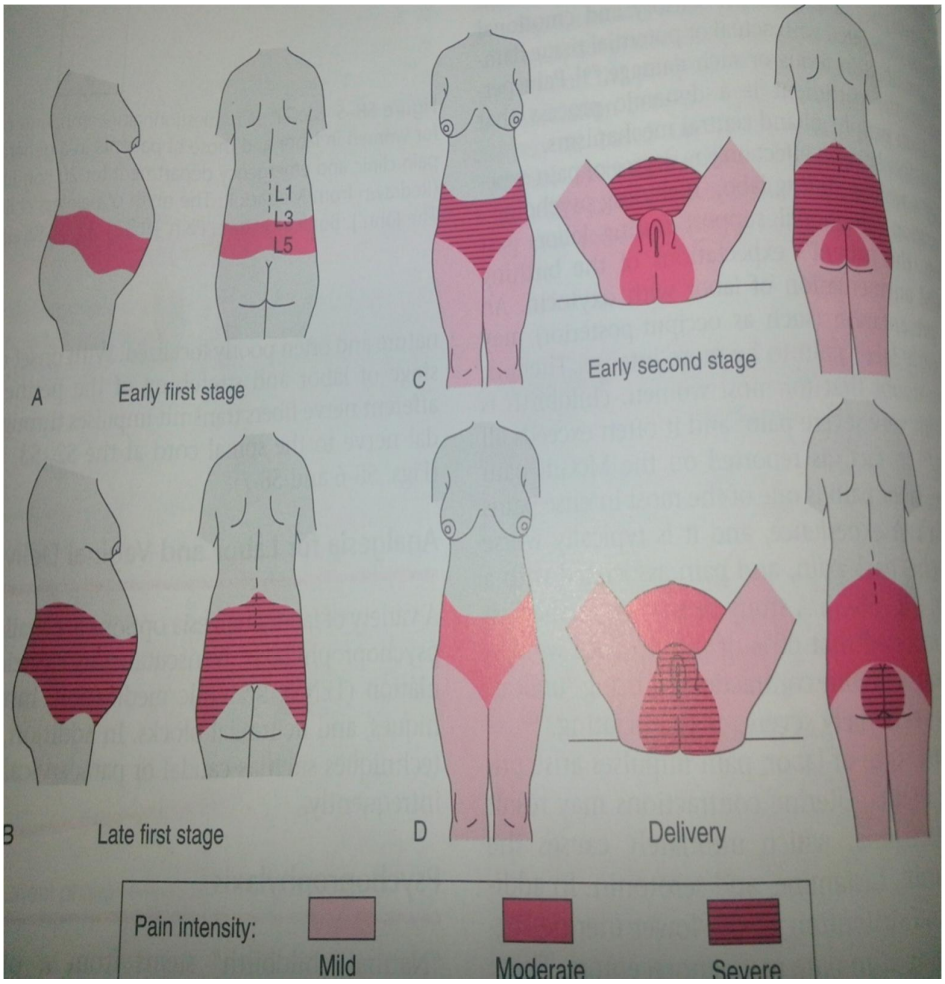


FIGURE-7

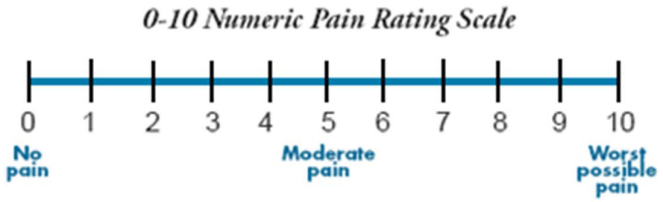
PAIN MEASUREMENT METHODS

Pain score is recorded by patient's history. The pain score should be reliable, valid and geared to the patient. Dolorimeter is the instrument used to measure pain [24].

PAIN ASSESSMENT

Numeric Pain Intensity Scale

The Numeric pain intensity scale is used to measure pain score.



0-1 : NO PAIN

2-4 : MILD PAIN

5-7 : MODERATE PAIN

8-10 : SEVERE PAIN

After administration of drug during labour, if the patients have good pain relief means their pain score will be between 0-1(no pain). If

they have moderate pain relief means their pain score will be between2-4 (mild pain). If they have mild and no pain relief means their score will be between 5-7 and 8-10 respectively.

Pain Rating Scale

From Wong D.L., Hockenberry-Eaton M., Wilson D., Winkelstein M.L., Schwartz P.: Wong's Essentials of Pediatric Nursing, ed. 6, St. Louis, 2001, p. 1301. Copyrighted by Mosby, Inc. Reprinted by permission.

Intensity of pain is expressed by different facial expression.

This pain rating scale is used in paediatric age group.

Degrees of pain by Visual Analogue Scale

According to VAS 4 Grades of pain present-10 cm scale is used[25].

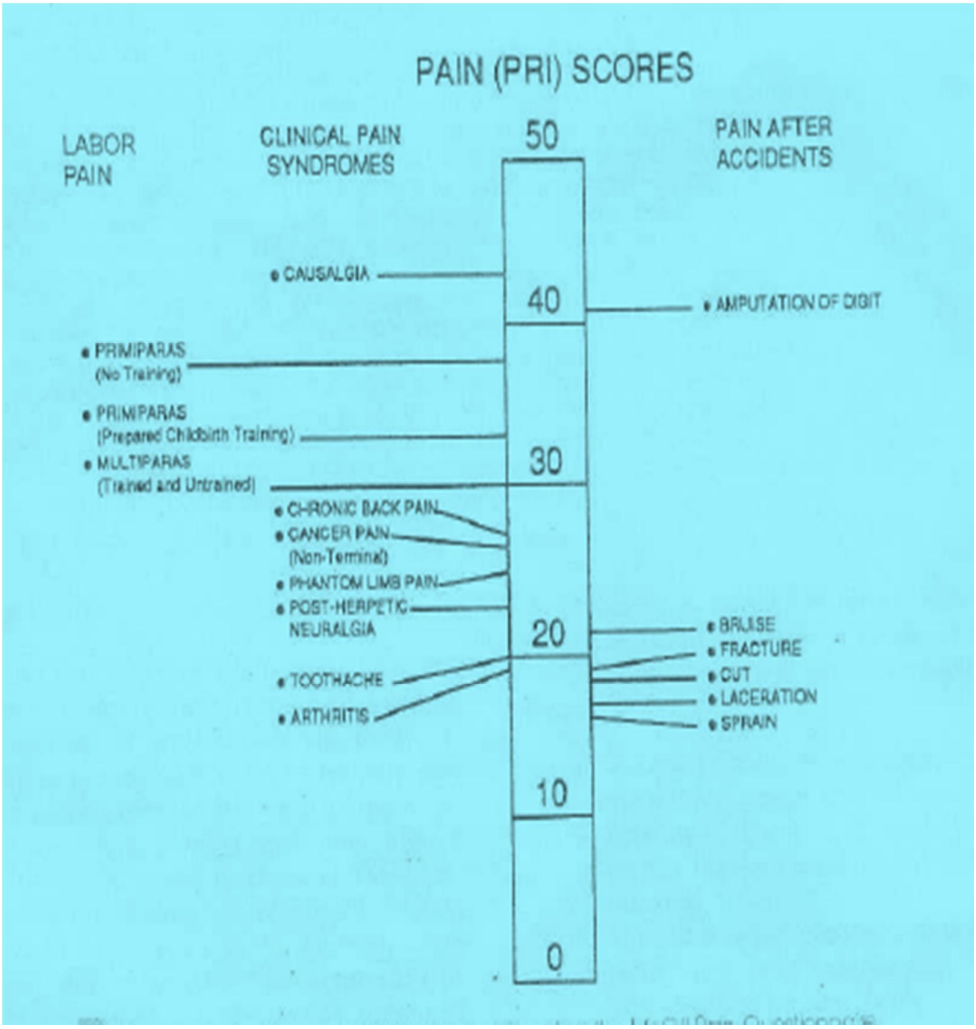
Grade-1 -No pain

Grade-II -Slight pain but comfortable

Grade-III -Moderate pain with discomfort

Grade-IV -Severe pain /maximum pain

.



Mc Gill pain questionnaire- Pain rating index

In this questionnaire pain scores are given to various types of pain.

METHODS OF LABOUR ANALGESIA

Various methods of pain relief are present .Selection of pain relief method depends upon the availability of technique and the choice of the individual.

An ideal analgesic technique should fulfil the following criteria:-

- It should be cheap and easy to administer.
- It should produce good, reliable pain relief.
- It should not impair consciousness and cooperation.
- It should not be toxic to mother and foetus.
- It should not produce cardio respiratory depression in foetus[26].
- It should not have any tocolytic action and it should not delay labour.
- It should allow the patient to ambulate during early stages of labour
- It should not have any long term effects on the mother

Non Pharmacological	**Pharmacological**	
	Systemic	**Regional**
Trans cutaneous electrical nerve stimulation (TENS)	Inhalational methods	Lumbar epidural analgesia
Relaxation/breathing techniques	Systemic analgesics	CSEA
Bio feedback and physical therapies	**Opioid analgesics** (Meperidine, Morphine Fentanyl, Sufentanil, Alfentanil,Remifentanil)	CSA
Temperature modulation: hot or cold packs, water immersion	**Non opioid analgesics** Agonist-antagonist analgesics(Nalbuphine, Butarphanol, Tramadol)	**Alternative regional anesthetic techniques** Lumbar sympathetic block[27], Pudendal block, Para cervical block
Hypnosis	Tranquillizers (Barbiturates, Phenothiazine derivatives, Benzodiazepines)	

Massage	Dissociative or amnesic drugs (Ketamine, Scopolamine)	
Acupuncture		
Aromatherapy		

OPIOID ANALGESIA

It comes under systemic analgesia method. It will not require specialized equipment or personnel. It can be given by intramuscular, subcutaneous or intravenous route. Intravenous route is either intermittent or continuous IV infusion. Regarding the rate of onset of analgesia IV route has quicker onset, IM route has delayed onset.

CLASSIFICATION OF OPIOID ANALGESICS	
Natural opium alkaloids	Morphine and codeine
Semi-synthetic Opioids	Diacetyl Morphine (Heroin), Pholcodeine
Synthetic Opioids	Pethidine (Meperidine), fentanyl, methadone, dextropropoxyphene, tramadol, ethoheptazine[28].

OPIOID RECEPTORS

Opioid receptors are present on neurons in the peripheral tissues and in the central nervous system. Three types of opioid receptors μ, ǩ, and δ are present in brain, spinal cord and peripheral tissues. Sub-types are present for μ and κ receptors.

ACTIONS ASCRIBED TO DIFFERENTIATE TYPES OF OPIOID RECEPTOR

μ(mu)	**κ(kappa)**	**δ(delta)**
Analgesia (supra spinal μ 1 + spinal μ 2)	Analgesia (spinal κ1) (supra spinal κ 3)	Analgesia (spinal + affective component of supra spinal)
Respiratory depression (μ 2)	Respiratory depression (lower ceiling)	Respiratory depression
Euphoria	Miosis (lower ceiling)	Affective behaviour
Miosis	Dysphoria	Reinforcing actions
Reduced GI motility	Hallucinations	Reduced GI motility
Physical dependence (morphine type)	Physical dependence (Nalorphine type)	
Sedation	Sedation	

NORMAL LABOUR

Labour is a multi factorial process, which involves uterine activity, cervical ripening and dilatation of cervix with expulsion of the foetus and placenta in an orderly manner. As well stated by Myerscough[29] if we were restricted to using only a single index in the progress of labour, then unhesitatingly we would drive the most reliable evidence of satisfactory advance in Primigravida at least from observations of increasing cervical dilatation.

Friedman[30] (1978) in his study on labour stated that ‘’the clinical features of uterine contraction namely frequency, intensity and duration cannot be relied as measure of normality... except for cervical dilatation and fetal descent , none of the clinical features of the parturient appear to be useful in assessing labour progression.

STAGES OF LABOUR:

Although labour is a continuous process it has been classically divided into three well-known stages.

FIRST STAGE:

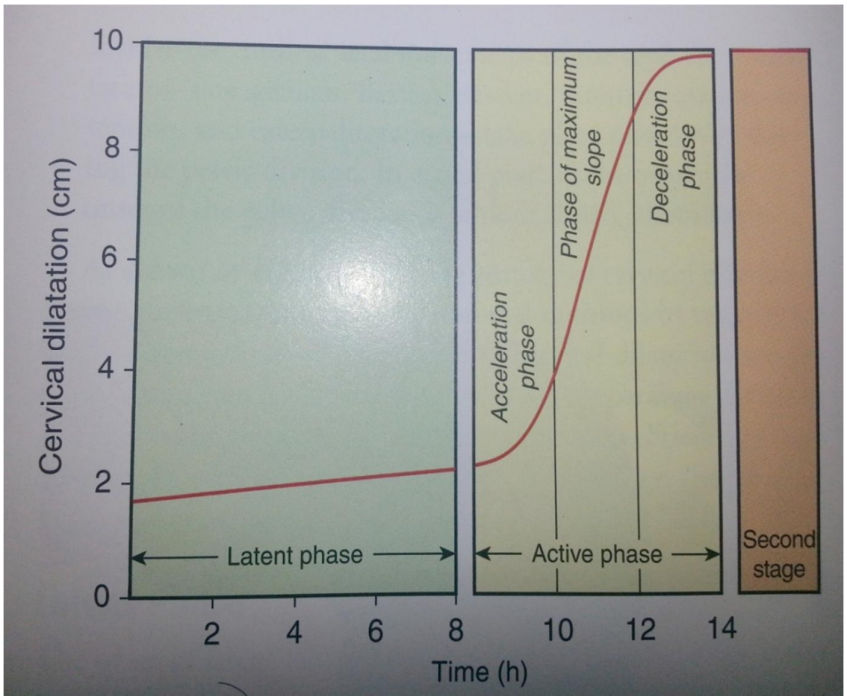
The first stage of labour begins with good uterine contractions of sufficient frequency, intensity and duration and ends when the cervix is sufficiently dilated to allow the passage of fetal head. It was Friedman[31] (1978) who begun a scientific approach to study the progress of labour. He plotted the rate of cervical dilation against time graphically and developed the concept of three functional divisions and the pelvic division.

During the preparatory division, only minimal cervical dilation takes place. It is during the dilatational division maximum cervical dilation takes place. It is understood better by dividing it into two phases, the latent phase and the active phase[32]. The latent phase corresponds to the preparatory division and the active phase to the dilatational division. Latent phase is again divided into Early latent and Late latent phase.

PHASE 0:

Beginning even before implantation a remarkably effective period of Myometrial quiescence is imposed. This phase is characterized by uterine smooth muscle tranquillity with maintenance of cervical structural integrity. To prepare the uterus for labour, the Myometrial tranquillity

must be suspended through what has been called as uterine awakening or activation.



DILATATION CURVE IN NULLIPAROUS WOMEN

Studies of Liggins and Thorburn[33] revealed that fetal neuro endocrine signals originating in the hypothalamus initiate a cascade of events that activate the fetal hypothalamic- pituitary-adrenal axis to increase fetal glucocorticoid production which in turn increased oestrogen and activated the contraction associated protein causing uterine contractility.

LATENT PHASE:

Latent phase is divided into Early latent and Late latent phase. During Early latent phase uterine contraction along with cervical effacement takes place. Late latent phase ends with 3-4 cm of dilatation.

ACTIVE PHASE:

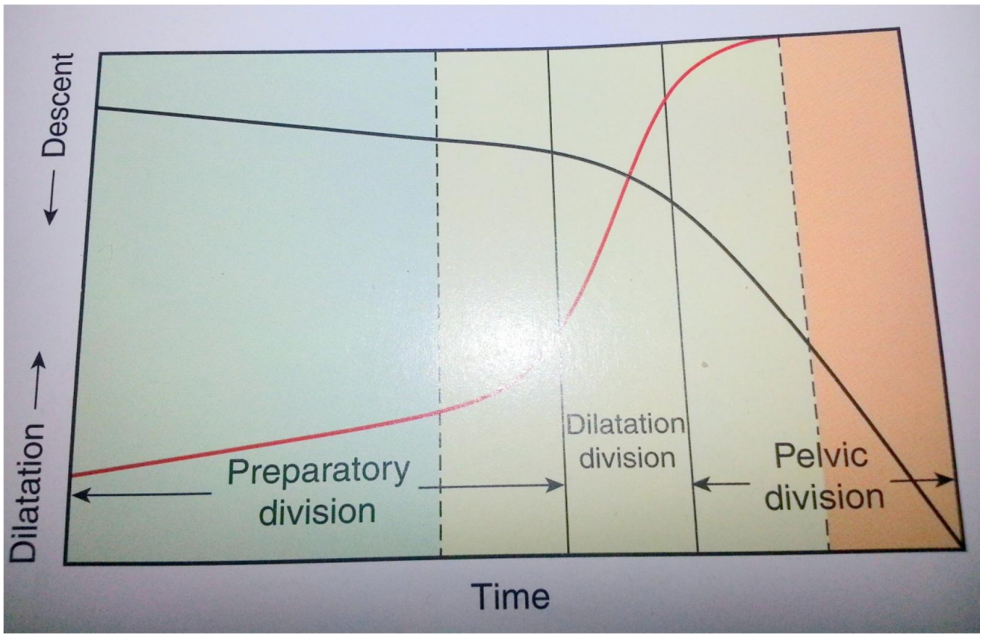
This phase starts with cervical dilatation of 4 cm and ends with full dilatation. Friedman[31] subdivided the active phase into the acceleration phase, the phase of maximum slope and the deceleration phase.

The acceleration phase begins with 2.5 cm of cervical dilatation and lasts up to 4 cm. The phase of maximum slope is from 4 to 9 cm. The phase of deceleration is from 9-10 cm. According to Friedman[31] the mean duration of active phase of labour in nulliparous women was 4.9 hrs with the standard deviation of 3.4 hrs. The active phase was reported to have statistical maximum of 11.7 hrs with considerable variation in duration.

PELVIC DIVISION:

The pelvic division commences with deceleration phase of cervical dilatation. The classical mechanism of labour that involve cardinal fetal movement in a cephalic presentation –engagement, flexion, descent,

internal rotation, extension, restitution and external rotation all takes place principally during the pelvic division.



FUNCTIONAL DIVISIONS OF LABOUR

SECOND STAGE OF LABOUR:

Begins with complete dilatation of the cervix to the delivery of the foetus.

THIRD STAGE OF LABOUR:

Extends from the time of delivery of foetus up to the delivery of placenta and its membranes.

CERVIX IN LABOUR

The uterine cervix has generally been considered as an inert organ, playing a passive role in labour. During most of pregnancy the cervix must remain unyielding and reasonably rigid. With the initiation of parturition the cervix must often soften, yield and become more readily dilatable.

The cervix is a tubular connective tissue structure composed of three principal components, viz. Collagen, smooth muscle and the connective tissue or the ground substance. According to Rorie and Newton [34](1967) the muscle components as determined by planometry is29% in the upper third,18% in the middle third and 6% in the lower third and 69% in the corpus of uterus.

Schwalm and dubrausky[35] (1966) reported that the cervical muscle content to be between 2% to 5%. However, the arrangement of the muscle fibres facilitated effacement and dilatation. The muscle fibres near the internal os lies in continuum with the outer longitudinal fibres of the myometrium, while the muscle fibres near the external os are circularly arranged.

The extra cellular matrix contains fibrillar components like collagen, elastin, proteoglycans, glycoprotein and other proteins. The chemical compositions of the identified constituents are relatively well established showing the predominance of collagen.

Collagen types I and III are the main types found in the human cervix. Kleissl et al[36] (1978) found 62 – 80% of collagen type is I and 20 – 30 % is type III. Tropocollagen, the characteristic subunit of the interstitial collagen consists of three polypeptide chains joined together in triple helix. The amino acid composition of this helix is unique. Glycine the smallest amino acid in every third position allows tight packing of the triple helix.

COMPLICATIONS OF PROLONGED LABOUR

Labour is said to be normal in retrospect and said to be prolonged when the combined duration of first and second stage is more than the arbitrary time limit of 18 hours. The aim of monitoring the progress of labour is to prevent prolonged labour. A labour which is unduly prolonged can lead to maternal or fetal distress[37]. Uterine contractions, cervical resistance and the forward pressure exerted by the leading fetal head are the factors influencing the progress of the first stage of the labour.

Infection may complicate prolonged labour and pose a serious danger to mother and foetus. After the rupture of membrane bacteria enter the amniotic fluid, traverse the amnion and invade deciduas and chorionic vessels, that causing maternal and fetal bacteraemia ending in sepsis. Fetal pneumonia caused by aspiration of infected amniotic fluid, is another serious consequence. Rarely, localized rings or constrictions of the uterus develop in association with prolonged labour.

During childbirth the pelvic floor is exposed to direct compression from the fetal head as well as to downward pressure from maternal expulsive efforts. These forces stretch and distend the pelvic floor, resulting in functional and anatomical alterations in the muscles, nerves and connective tissue.

According to Leitch and Walker [38](1998) Sultan and Stanton[39] (1996) the effects on the pelvic floor during childbirth lead to urinary and anal incontinence and to pelvic organ prolapse. Currently there is uncertainty regarding the incidence of childbirth associated pelvic floor injury, Samuelson and associates[40] (1999).

Sokol and co-workers[41] (1977) reported that 25% of nulliparous labours were complicated by active-phase abnormalities. Friedman[42] (1972) subdivided active – phase problems into protractions and arrest

disorders. He defined protraction as a slow rate of cervical dilatation or descent, which for nulliparous was less than 1.2 cm dilatation/hour or less than 1cm descent / hour.

Arrest is defined as a complete cessation of dilatation or descent. Arrest of dilatation was defined as 2hours with no cervical change and arrest of descent as 1 hour without fetal descent.

ACTIVE LABOUR PHASE ABNORMALITIES

Abnormal labour patterns	Diagnostic criteria in nulliparous women
1. Prolongation disorder (prolonged latent phase)	>20hrs
2. Protraction disorders Protracted active –phase dilatation Protracted descent	 <1.2 cm/hr <1.0cm/hr
3. Arrest disorders a. Prolonged deceleration phase	 >3hr
b. Secondary arrest of dilatation	>2hr
c. Arrest of descent	>1hr
d. Failure of descent	No descent in deceleration phase or second stage

Effectively the overall duration of labour is determined by the length of the first stage, because the number of hours taken for the cervix to dilate represents 90% of the entire birth process (Olah ks et al 1992)[43]. Though 90% of duration of labour is contributed by first stage of labour, no acceptable medical and surgical methods are available to reduce the duration of first stage.

Active management of labour was introduced into clinical practice in 1963 at national hospital, Dublin or Driscoll [44]and colleagues disciplined and standardized the labour management protocol.

Desai et al., (1982)[45] in their study of valethamate bromide accelerated the first stage of labour provided patients were in late latent labour. They also reported that valethamate use was unsatisfactory in thick uneffaced cervix and also on patient with ineffective uterine contraction. Baser et al (1993)[46] profoundly supported desai study.

Singh et al., [47] studied the effect of drotaverine in acceleration of labour and found that there was increased incidence of atonic post partum haemorrhage and it offered no pain relief.

Episiotomy and assisted vaginal delivery are widely used methods in second stage of labour to facilitate delivery. Advantage of prophylactic

episiotomy included reduction in the duration of the second stage and reduction of trauma to the pelvic floor musculature, (Goodlin et all) [48].

Thilanganathan et al.,[49] (1993) compared a regime of active management of the third stage with syntometrine and controlled cord traction and concluded that though the length of the third stage of labour was reduced, there was no significant reduction in blood loss compared to the physiological management . Mitchelle and Elbourne[50] (1993) found that syntometrine was more effective in prevention of postpartum haemorrhage.

Philpott (1972) [51], O' Driscoll et al (1973)[52], Studd (1973)[53], Illancheran et al, (1977)[54] studied the effect of the rate of cervical dilatation in various ethnic groups in different countries. The normograms derived show similar rates of dilatation in various ethnic groups and studies have confirmed that ethnicity has little influence on the rate of dilatation.

Hellman and Prystomsky et al, (1952)[55], had conclusively proved that, in primi, the perinatal loss mounted rapidly when the first stage of labour exceeded 20 hours. Acceleration of labour to shorten its duration without jeopardising the maternal and fetal condition would therefore, minimise the maternal and fetal morbidity and mortality.

Kieran O Driscoll et al (1973)[56] adopted a policy of active management to ensure that every patient delivered within 12 hours. Cervical dilatation was plotted on a simple graph (Friedman, 1967)[26]. He stated that intervention was mandatory unless cervical dilatation exceeded one centimetre each hour.

Pajntar M et al[57] studied the contribution of cervical smooth muscle activity to the duration of latent and active phases of labour and concluded that, cervical smooth muscle activity contributed to the duration of the latent phase.

L .D. Cardazo et al[58] in their study of predictive value of cervimetric labour patterns in Primigravida concluded that a prolonged latent phase was associated with caesarean section rate of 16 .77. They also reported that the rate of cervical dilatation played a vital role in the comparison of incidence of vaginal delivery and caesarean section rate.

Application of antispasmodics in obstetrics was first introduced by Von kries[59] and his pupils in 1923. A remarkable shortening of the duration of labour was obtained by using spasmalgin.

In 1943, Mauks[60] reported a definitive shortening in the duration of labour by the use intramuscular troparin (a papaverine and methyl

atropine bromide) an antispasmodic drug in primiparous as well as multiparous women.

In 1948, Sauter[61] studies used di hydro ergotamine as a cervical relaxant in cases of delayed labour, but later its action was proved to be due to its oxytocic properties by Embery and Gareh.

Gupta et al[62] studied the effect of intra cervical injections of hyaluronidase in Primigravida women during labour. It caused acceleration and shortening of the first stage of labour. They concluded that it significantly shortened the active phase of labour by 2.09 hours.

Charankachu[63], Herabutya[64] et al in their study on cervical ripening and dilatation by Glycerol trinitrate and isosorbide trinitrate reported that both the drugs were not of much use and also were associated with severe maternal side effects like headache and hypotension.

Wm .J. Stevens[65] (1932) first reported the use of hyoscine in labour which included 200 women concluded that duration of labour was shortened. No drug intolerance and contraindications were encountered.

Roland et al[66] (1956) in their study noted the effects of barbiturates in obstetrics, among the various types of drug combination used to

produce analgesia, Hyosine with Demerol was least detrimental to the foetus.

Melzack and wall's (1965)[67] introduced the "Gate control theory" and explained the various methods of pain relief in labour.

The American college of obstetricians and gynaecologist (2004) [68] have specified that it is the responsibility of the obstetrician to develop the most suitable response to accomplish the request for pain relief. Hence taking into the consideration of advantages and disadvantages of various methods of pain relief and labour acceleration, IM Tramadol hydrochloride is found to be effective in pain relief and also shortening the duration of labour

TRAMADOL

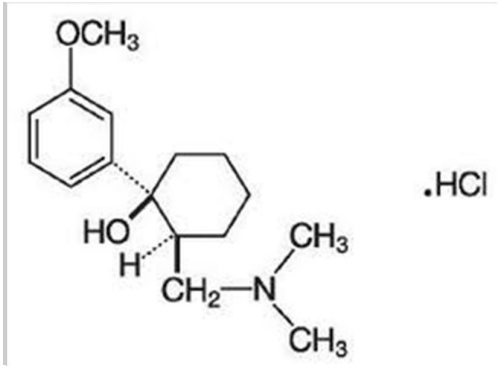
In 1971, Tramadol HCL, a narcotic drug was introduced in Germany. This newly introduced analgesic acts centrally and relieves pain by opioid agonism. It has weak affinity over ķ and δ opioid receptors and moderate affinity over μ opioid receptor. It inhibits 5 hydroxy tryptamine and noradrenalin reuptakes and it activates monoaminergic spinal inhibition of pain. Dose is 1 – 2 mg / kg body weight. It has 10% of morphine's potency. Its side effects lower than morphine.

Onset of action is within 15 minutes and lasts for 2 – 3 hours. Its tolerance is good and it is safe in heart disease patients and its abuse potential is very low. Placental permeability of the drug is high. However, neonate's hepatic enzymes will metabolize Tramadol. The side effects of Tramadol can be partially reversed by the opioid antagonist Naloxone.

Chemical structure

It is a racemic mixture of 2 enantiomers (+) tramadol and (–) tramadol and has chemical structure: (IR, 2R)–ve/–2–{(dimethyl amino) methyl]-1-(3-methoxyphenyl) cyclohexaonl hydrochloride.

Molecular formula: C 16 H 25 NO 2 HCl



It has dual mechanism of action. It is a synthetic codeine analogue (4 phenyl piperidine analogue).

Characteristics:

- odourless
- White to off white crystalline
- Soluble in water and ethanol
- Molecular weight-299.84
- Characteristic unpleasant taste which is mildly bitter
- pKa value is 9.3 at 293 K
- pH 6-6.8
- Available as drops, capsules, injections and suppositories. It is an aqueous sodium acetate buffered solution.

Mechanism of Analgesia

By two pathways it produces analgesia.

1. Opioid pathway:

It acts as an agonist on μ, ǩ and δ receptors. The duration of action is comparable to morphine. This opioid analgesic action is reversed by naloxone.

2. **Non-opioid pathway:**

It increases the pain threshold by means of inhibiting the reuptake of serotonin and noradrenalin and by activating the mono aminergic spinal inhibition of pain. It also acts as an antagonist over $M_1$and M_3 Muscarinic, nicotinic receptors, 5HT2C receptor, NMDA and GABA-A receptor.

Pharmaco-kinetic properties:

Absorption:

Bio availability is 100% for IM route.

Bio availability is 68-100% for oral route.

Distribution:

It is 20% plasma protein bound. It crosses the placenta (80%).

Metabolism:

It is metabolised by demethylation via cytochrome P450 isoenzyme in liver.

Excretion:

90% of the drug is excreted through the kidney. 10% of the drug is excreted through faeces. T ½ is 5 hours. Elimination half life is 5-6 hours. T ½ is increased in patients with kidney and liver problem. It is contraindicated in end stage renal disease patients.

Therapeutic efficiency:

IM Tramadol 50-150 mg is equal to 50-100 mg of IM pethidine. Tramadol 100mg is equal to 10mg of morphine.

Dose:

50-150mg (or) 1-2mg/kg/body weight/ 4-6 hourly.

Maximum dose is 400mg/day.

Administration:

Oral, Intra-venous, Intra-muscular, Per-rectal.

Actions:

CNS:

Analgesic efficacy is equal to pethidine.

CVS:

It reduces pulmonary artery pressure; hence it can be used for pain relief in heart disease patients. Eg: Acute Myocardial Infarction, Diagnostic cardiac catheterisation.

RS:

Therapeutic dose does not have any effect on tidal volume, respiratory rate. Effective analgesia decreases pain induced hyperventilation. Over dosage may cause respiratory depression.

Other effects:

It has minimal smooth muscle relaxation action; hence it may cause urinary retention, constipation and cholestasis. It has anti-tussive and dose dependent mydriasis effect. On long term use, it will not produce addiction, tolerance and dependence.

Indication:

It is used for the treatment of moderate to acute severe pain and chronic pain due to surgical procedures, cancer, MI, trauma, painful diagnostic procedures and obstetric pain.

Interaction with other drugs:

It has interaction with MAO inhibitors. Eg: anti-depressants.

Contraindication:

It is contraindicated in acute intoxication with hypnotics, alcohol, CNS acting drugs and analgesics.

IV Tramadol is contraindicated in patients with epilepsy.

Side effects:

Nausea, dry mouth, vomiting, hot flushes, transient tachycardia, fatigue, dizziness, sweating.

Over dose and intoxication:

Symptoms are salivation, restlessness, cyanosis, Mydriasis, ataxia, prostration, cramps, dyspnoea, tremor, vomiting.

Opioid Antagonists:

Naloxone is the opioid antagonist is used to reverse the neonatal respiratory depression caused by opioid use during labour. **Dose:** is 10 microgram/Kg. It is given in the cord. It can be given through IM, IV and

SC routes. It reverses the depression of minute ventilation in new born. The dose is 0.1mg/Kg of a 1mg/ml solution.

REVIEW OF TRIALS WITH TRAMADOL ON LABOUR ANALGESIA AND LABOUR ACCELERATION

A study conducted in Iran in 2009, in 160 full term pregnant women by Maryam khooshideh and Ali shahriari compared the effect of IM pethidine 50mg and IM Tramadol 100mg in labour. Regarding pain relief IM pethidine gives good analgesic effect in second stage of labour but IM Tramadol exhibits moderate pain relief in first stage of labour[69]. Labour duration shortened in Tramadol. Incidence of maternal and neonatal side effects is lower in Tramadol group.

A non randomised trial conducted in 2010 by RAO ZA et al, in which they studied the labour duration and delivery mode after giving walking epidural with 0.5% Tramadol and 0.1% Bupivacaine. This study results showed reduction in labour duration.

A study conducted in 2000 by Fieni S Angeri F et al, in which they compared parenteral Meperidine and Tramadol for effective pain relief in Labour. The study results showed that tramadol gives good pain relief with good tolerability without any neonatal and maternal complications[70].

Parenteral tramadol compared with pethidine in 1980 by Bitsch M et al. Though both groups had similar pain relief they recommended Tramadol because it did not produce any maternal and neonatal respiratory depression[71].

Hussain P et al studied the effect of pain relief in labour between 100mg pethidine and 100mg tramadol in 1987. Analgesic effect of pethidine and Tramadol was similar but the side effects are less in Tramadol groups[72].

IM Tramadol is used for pain relief in MI, Trauma and labour. This study was conducted by Lehman KA in 1994. This study showed that IM Tramadol has good analgesic effect in Labour pains[73].

A study on management of labour pains with tramadol, conducted by Rad brach L et al, in 1996 showed that tramadol produces good analgesic effect without neonatal respiratory depression[74].

A study on pain relief in normal labour and abnormal labour was conducted by Sarkar B, Mukhopadhyay AK in 1997, between IM pethidine and IM Tramadol. The incidence of fetal respiratory distress, caesarean section and labour duration were low in Tramadol group[75].

A study conducted by claahsen-Vander Grinten HL et all in 2005 to study the effect of Tramadol in newborn whose mothers in 1st stage of labour were given IM Tramadol as pain relief. Maternal and neonatal blood samples were taken at immediate post partum, and 1, 2, 3, 6and 12hrs after postpartum[76].

Foetal blood samples showed the presence of Tramadol and its metabolites equivalent to maternal blood levels. Though it indicates high placental permeability of Tramadol, it has no effect on neonatal APGAR. It produces pain relief in labour with maternal side effects like nausea, drowsiness without changes in cardio respiratory system and respiratory system. This study concluded that the effective dose of the drug is 1mg/kg body weight.

A comparison study of IM Tramadol in labour and no drug in labour was done by Usha rani Sharma, Verma RS in 1997. The results of the study showed that the drug Tramadol produce excellent analgesia without any side effect in mother and newborn and confirmed its safety of usage in labour[77].

Analgesic effect of Morphine, Pethidine and Tramadol was compared by Parasert sawat et al in 1986. All the 3 drugs produced

almost similar analgesic effect. The difference in analgesic effect among the 3 drugs is statstistically not significant[78].

Nagesh kumar did a study in a health centre in 2004. He selected 100 labouring women and has given IM Tramadol to 50 patients and IM distilled water to 50 patients. He compared both groups and concluded that Tramadol is a safe analgesic and it also reduces the duration of labour and it can be given in any primary health centre with minimal monitoring facilities without any maternal or neonatal side effects[79].

A comparative study between Tramadol and Pentazocine by Singh S in 2001 as labour analgesics concluded that analgesic effect was 80% with Tramadol and 60% with Pentazocine with slightly more maternal and neonatal complication in Pentazocine groups[80].

16 trials of IM Opioids as labour analgesics were studied by Elbourne D and Wiseman RA and they concluded that the degree of pain relief, drug delivery interval and mode of delivery showed no difference between Pethidine and Tramadol group[81].

The programmed labour produces good pain relief, shortens the duration of labour and reduces the blood loss in third stage. These effects

were evaluated by Meena Jyothi, Singhal prabha, Choudary Devika in 2006. It has no fetal side effects[82].

A comparison study of IM Pentazocine and IM Tramadol as labour analgesics was conducted by Nagaria tripti, Acharya Jyotsna in 2006[83] in 200 term labouring women. In Tramadol group about 37% of patients had satisfactory pain relief, 38% of patients had moderate pain relief and 16% had mild pain relief.

In Pentazocine group 14% of patients had satisfactory pain relief, 34% had moderate pain relief and 42% had mild pain relief. The labour duration, side effects of the drug and drug delivery interval were less in tramadol group.

The safety and efficacy of IM Tramadol 100mg in 100 Primigravida was studied by Sudha patil et al[84] in 2012. 58% of patients had good pain relief, 30% of patients had moderate pain relief, and 12% of patients had mild pain relief.

Safety and analgesic efficacy of IM Tramadol 50mg, IM Tramadol 100mg and IM pethidine 75 mg in 90 labouring Primigravida patients were studied and compared by Viegas OA et al[85] in 1993. Similar percentage of pain relief was present in both 75mg pethidine and 100 mg

of Tramadol group. Respiratory depression and adverse effects of the drug were common in Pethidine group. Tramadol has fewer side effects than Pethidine.

AIMS OF THE STUDY

To study the effect of IM Tramadol hydrochloride in labour.

1. To study the effectiveness of pain relief by opioid agonism.
2. To evaluate the reduction in duration of first stage of labour if any (by inhibiting sympathetic activity and M_3 receptor antagonism)
3. To ascertain any side effect on mother and foetus.
4. To evaluate the cost effectiveness of the drug.

MATERIALS AND METHODS

MATERIALS

Drug

IM Tramadol hydrochloride

1 ampoule contains 2 ml

Route: IM

1 ml is equal to 50 mg

Dose: 100mg (1mg per kg body weight)

METHODOLOGY

STUDY DESIGN: Comparative prospective interventional study.

CASE SELECTION

A total of 400 Primigravida who were admitted to the labour ward of GOVT RSRM LYING IN HOSPITAL during the period October 2012 to November 2013, in late latent phase (i.e.,) with cervical dilation of 2-3cm were enrolled in this study. They had fulfilled the inclusion criteria and exclusion criteria with informed consent.

CRITERIA FOR SELECTION OF CASES

Inclusion criteria

1. Primigravida
2. 18-35years of age
3. Thirty seven completed weeks of gestation
4. 2-3cm of cervical dilatation
5. Adequate pelvis for vaginal delivery
6 . Intact membranes

7. Singleton foetus

8. Vertex presentation

9. Went in for spontaneous labour.

10. Informed and written consent

Exclusion criteria

1. Multigravida

2. Patients allergic to Tramadol hydrochloride after subcutaneous test dose

3. Pregnancy with medical, surgical or obstetric complication such as ante partum hemorrhage, preeclampsia, malpresentations and cephalopelvic disproportion.

4. Induced labour

5. Cervical dilatation greater than 3cms.

6. Ruptured membranes.

7. Patients who have not given consent for the study

The first 200 patients fulfilling the inclusion criteria in late latent phase of labour consenting to the study were recruited to take part in the study.

The selected patients were randomly divided into two groups I and II.

Group I and II

- ❖ Group I was given IM Tramadol hydrochloride 100mg in late latent phase of labour.
- ❖ Progress of labour was monitored by Partograph.

Effectiveness of the drug was assessed by noting

- Pain score before and after drug administration.
- Numeric Pain Intensity Scale is used for assessing labour pain severity
- The duration of the first stage
- Total duration of labour
- Mode of delivery

- Maternal side effects
- Fetal outcome
- Duration of hospital stay
- Group II was a control group, without giving Tramadol, the above mentioned were observed.
- General physical examination and obstetric examination were done in all cases.
- Neonatal management is as per routine protocol.

The following were noted:

- Pain score of the patient before and after drug administration.
- Onset of drug action.
- Progress of labour was monitored by partograph.
- Duration of labour.
- Fetal well being is confirmed by cardiotocography
- Mode of delivery and reason for the same were analyzed.
- Maternal side effects, Complication during labour were analyzed

- Weight of the baby and APGAR score were recorded

- Cost effectiveness, the dosage of the drug and the number of doses required to reduce the duration of labour were analyzed.

- Efficacy in pain relief was assessed by using Numeric Pain Intensity Scale. Observations were made at 0, 30, 60, 90 and 120 minutes after the medication.

INDICATION FOR ENHANCEMENT OF DOSAGE

Initial dose of drug was given at 2- 3cm dilatation of cervix. The patients were reviewed after 2 hours and dose repeated for the patient who had severe pain and withheld in patients who had already entered into the second stage.

OBSERVATIONS AND RESULTS

TABLE –I

AGE DISTRIBUTION BY GROUP

AGE IN YEARS	Group I n=200		Group II n=200	
	No	%	No	%
18-20	43	21.5	55	27.5
21-25	106	53.0	101	50.5
26-30	41	20.5	34	17.0
30-35	8	4.0	8	4.0
>35	2	1.0	2	1.0

Pearson Chi-Square= 2.243, df =4 p value

Table I shows age distribution of Primigravida by group. Majority of the Primigravida found to be between 21-25 years of age in two groups. The chi square statistical test infers that age distribution was similar in the two groups. The range difference between the age groups of I and II were not statistically significant. Hence the two groups were comparable age wise.

AGE DISTRIBUTION BY GROUP

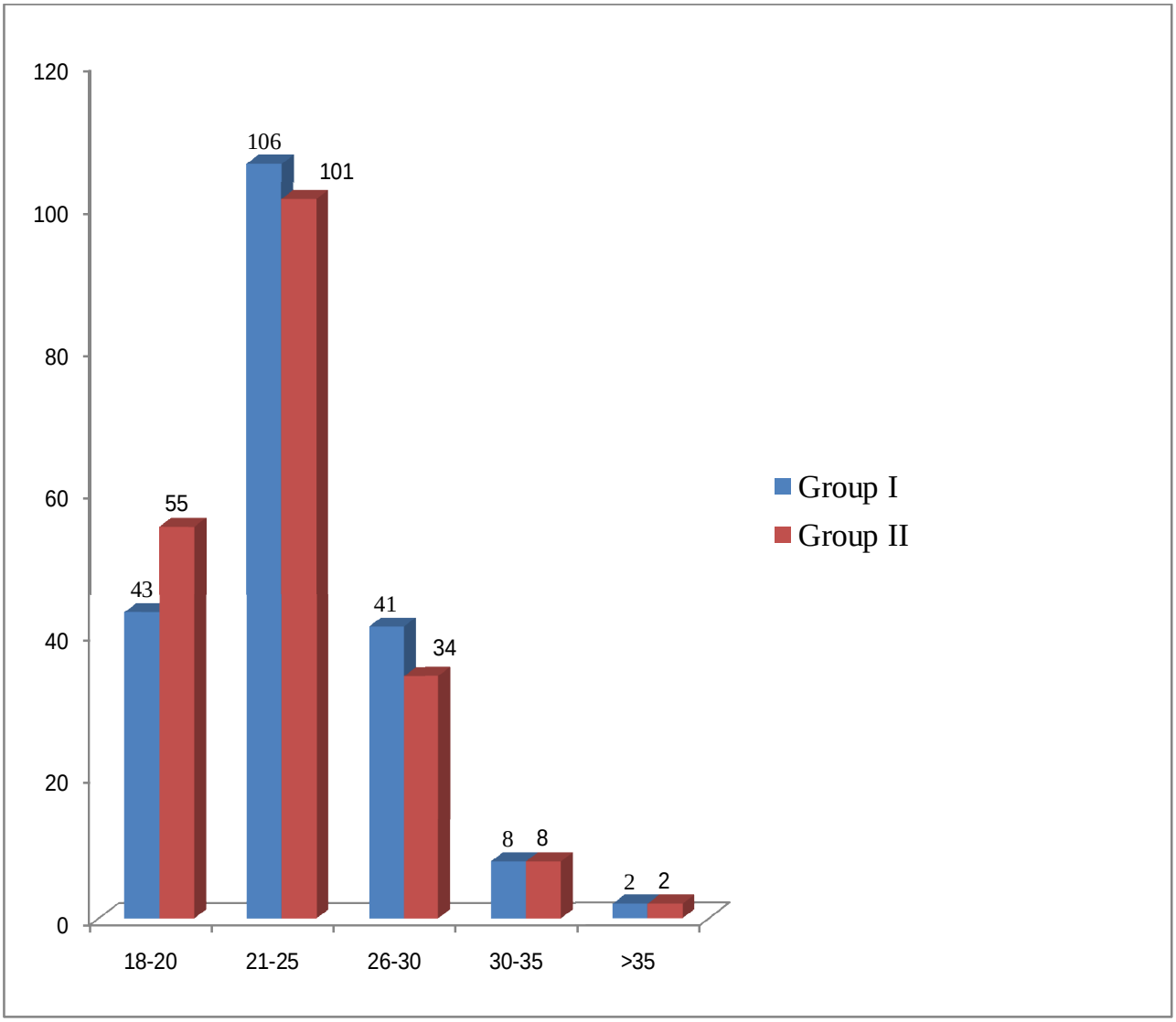


TABLE II

GESTATIONAL AGE BY GROUP

GESTATIONAL AGE IN WEEKS	Group I		Group II	
	No	**%**	**No**	**%**
37-38	18	9.0	35	17.5
38.1-39	73	36.5	70	35.0
39.1-40	90	45.0	75	37.5
>40	19	9.5	20	10.0

Pearson Chi-Square = 6.905, df = 3, p value= 0.075

Table II shows the period of gestation of Primigravida by group. Majority of the patients were found to be between 39.1-40 weeks gestational age. The chi square statistical test shows that the gestational age distribution was similar in the two groups. No statistical difference in the gestational age was established in the two groups.

GESTATIONAL AGE BY GROUP

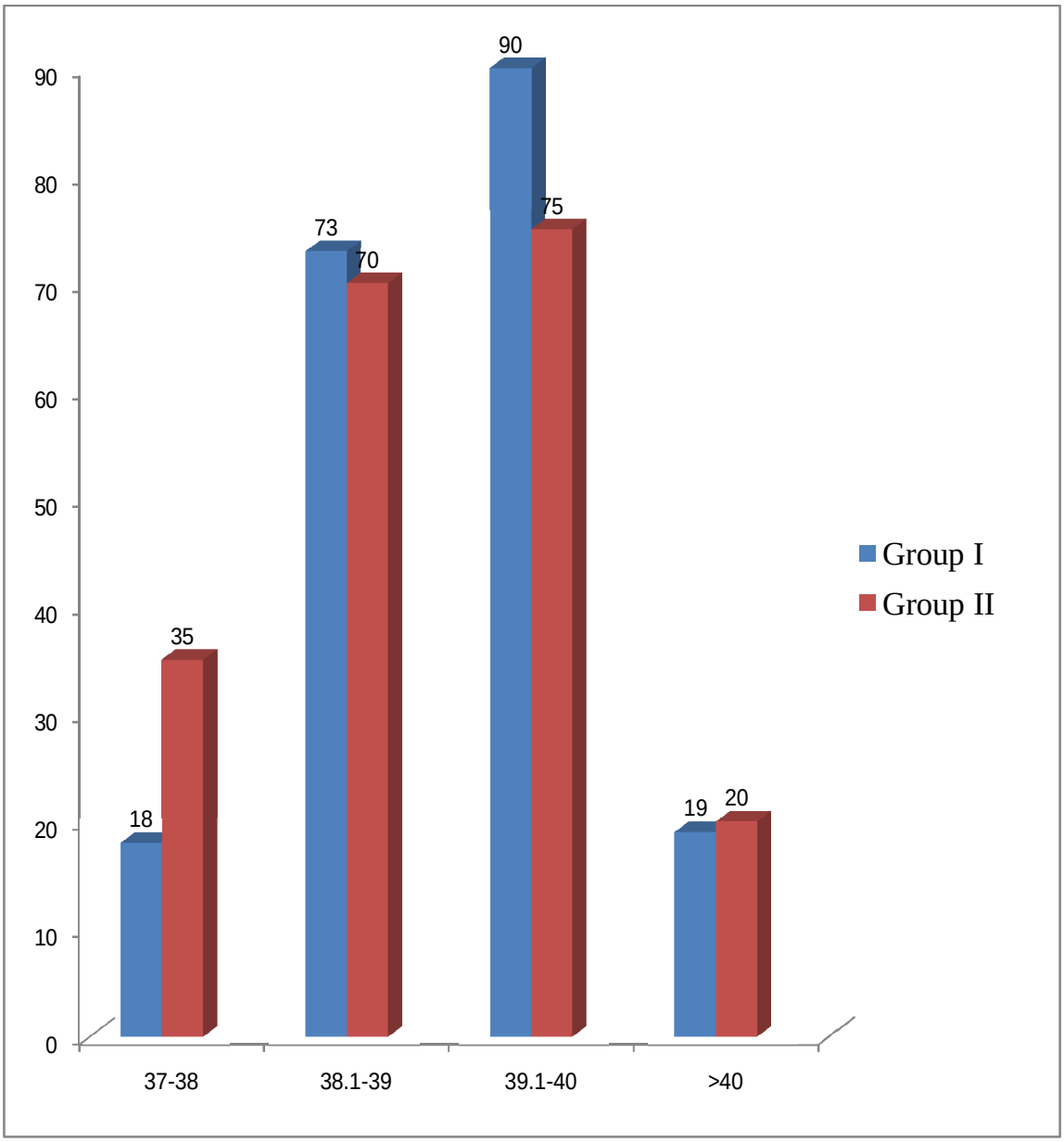


TABLE III

PAIN IN STAGE I

DEGREES OF PAIN	Group I		Group II	
	No	**%**	**No**	**%**
NO PAIN (0-1)	0	0	0	0
MILD(2-4)	0	0	0	0
MODERATE(5-7)	26	13.0	29	14.5
SEVERE(8-10)	174	87.0	171	85.5

Pearson Chi-Square =0.141, df =1, p value=0.707

Table III shows degree of pain in stage I before drug administration in both groups. In stage I, 87% of the patients in group I and 85.5% of the patients in group II had severe pain and 13% of patients in group I and 14.5% of the patients in group II had moderate pain. The pain score before drug administration is comparable in both groups (p value-0.707). No statistical difference in pain score in stage I was established in the two groups.

PAIN IN STAGE I

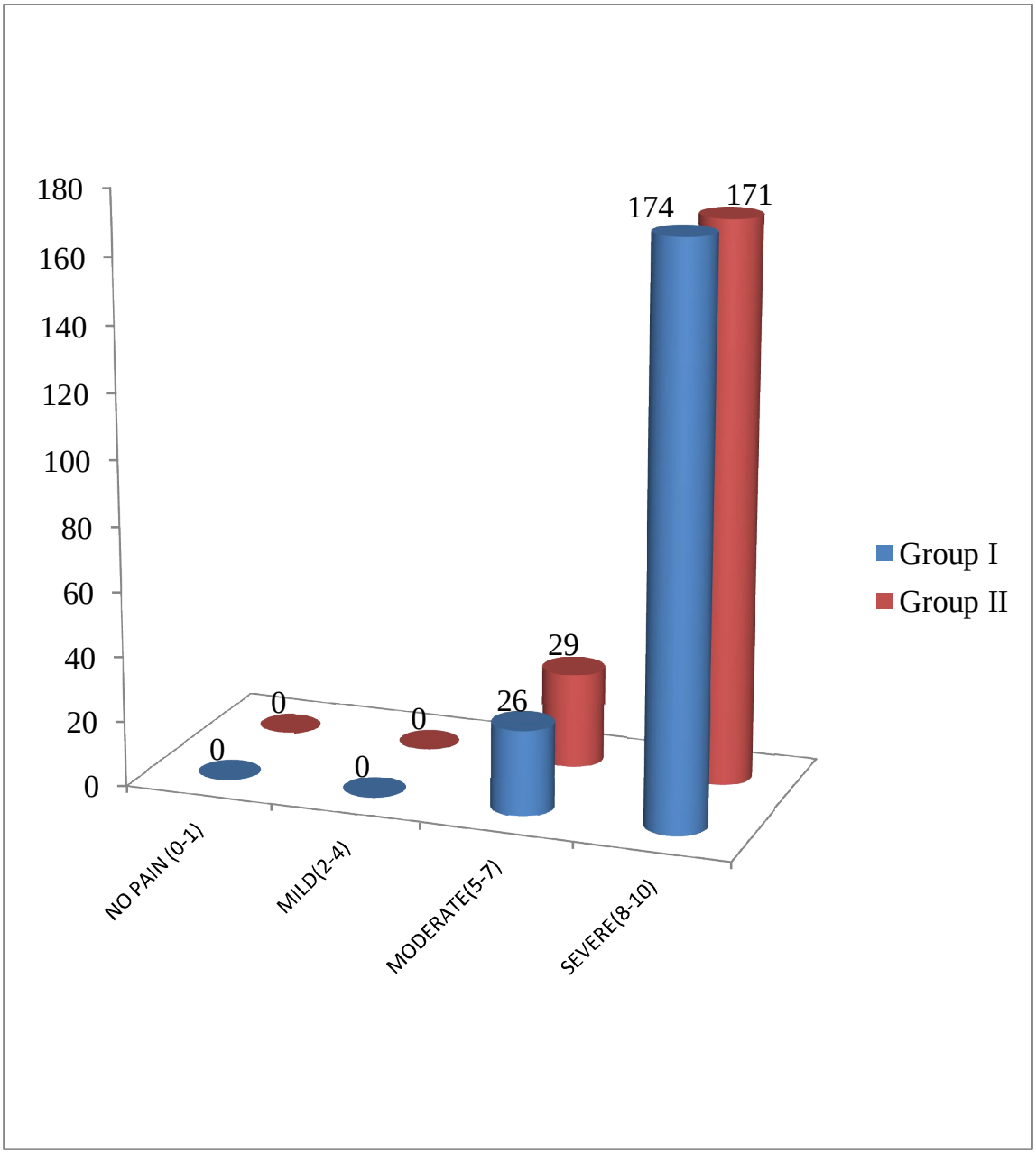


TABLE IV

PAIN IN STAGE I BEFORE AND AFTER DRUG ADMININTRATION IN STUDY GROUP

DEGREES OF PAIN	STAGE I BEFORE DRUG		STAGE I AFTER DRUG	
	No	%	No	%
NO PAIN (0-1)	0	0	0	0
MILD PAIN(2-4)	0	0	47	23.5
MODERATE(5-7)	26	13.0	77	38.5
SEVERE(8-10)	174	87.0	76	38.0

Stage I before mean=3.8680 SD=0.33933 t= 159.992

Stage I after mean =3.1450 SD=0.77263 t=57.5661 p value=0.000

Table IV shows degree of pain in stage I before and after drug administration in study group. In group I patients after drug administration the pain score is decreased in stage I (p value-<0.0001).

In group I, 23.5% of the patients had moderate pain relief and 38.5% of the patients had mild pain relief and 38% of patients had no pain relief.

PAIN IN STAGE I BEFORE AND AFTER DRUG ADMININTRATION

IN STUDY GROUP

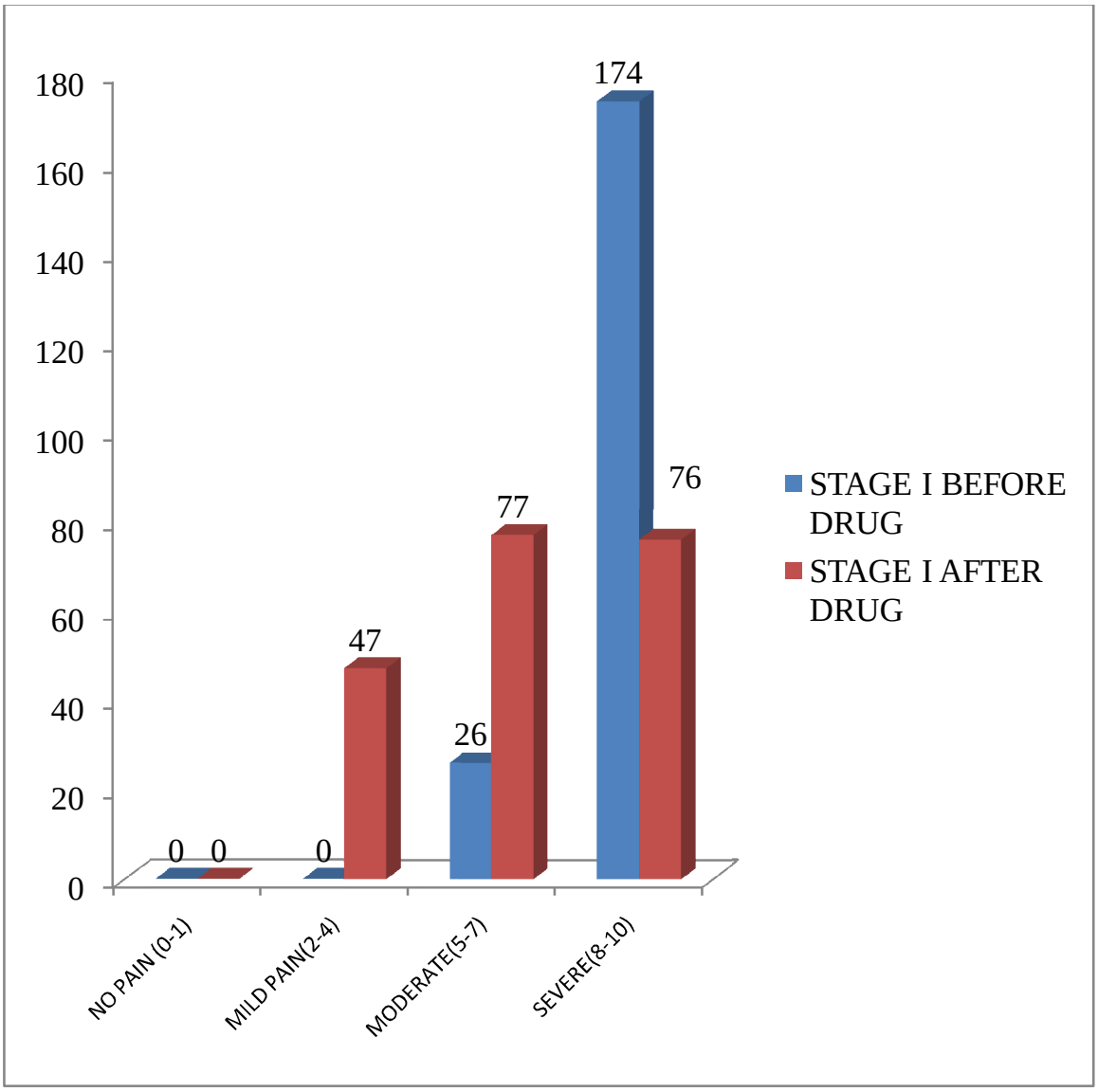


TABLE V

PAIN IN STAGE II IN STUDY AND CONTROL GROUP

DEGREES OF PAIN	Group I		Group II	
	No	%	No	%
MILD(2-4)	0	0	0	0
MODERATE(5-7)	29	14.5	0	0
SEVERE(8-10)	171	85.5	200	100
TOTAL	200	100.0	200	100

Pearson Chi-Square =31.267, df =1, p value=0.000

Table V shows pain in stage II in study and control group. In group I 85.5% of the patients had severe pain, 14.5% of the patients had moderate pain. In group II all patients had severe pain. The pain in stage II in group I is less than group II which is statistically significant(p value-<0.001).

PAIN IN STAGE II IN STUDY AND CONTROL GROUP

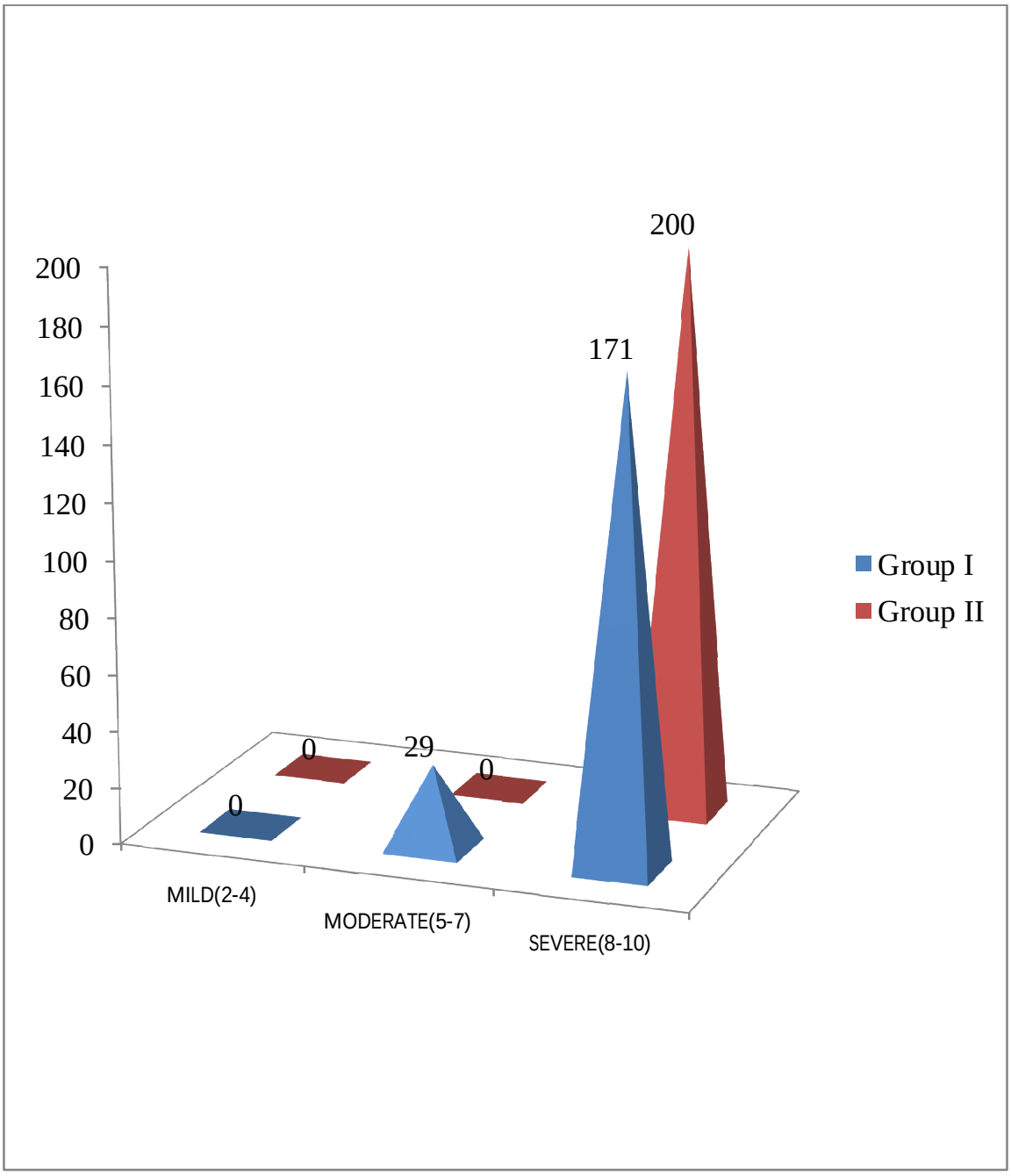


Table VI

MEAN PAIN SCORE IN LABOUR

PAIN	GROUP	MEAN	STANDARD DEVIATION
STAGE I BEFORE DRUG	STUDY	3.8680	0.33933
	CONTROL	3.8550	0.35298
STAGE I AFTER DRUG	STUDY	3.1450	0.77263
STAGE II	STUDY	3.8550	0.35298
	CONTROL	4.0000	0.00000

Stage I t=0.375 p=0.708

Stage II t=-5.809 p=0.000

Table VI shows mean pain score in labour in both groups. After drug administration, the mean pain score is decreased in stage I and stage II labour in group I patients than group II patients which are statistically significant.

TABLE VII

DURATION OF LABOUR

DURATION OF LABOUR IN MINUTE	GROUP	NUMBER	MEAN	SD	P value
STAGE I	STUDY	181	265.9392	64.06118	0.003
	CONTROL	178	284.9888	56.28408	
STAGE II	STUDY	181	24.8950	11.85913	0.012
	CONTROL	178	28.2135	12.89459	
STAGE III	STUDY	181	8.8398	3.36019	0.089
	CONTROL	178	9.4382	3.27964	

Table VII shows duration of all three stages of labour in both groups. Duration of Ist and IInd stages of labour is decreased in study group than control group. Statistical significance showed in this table. Duration of third stage of labour is not statistically significant.

Table VIII

TOTAL DURATION OF LABOUR

TOTAL DURATION OF LABOUR	Group I		Group II	
	No	%	No	%
< 200 MIN	12	6.0	2	1.0
201-250 MIN	48	24.0	27	13.5
251-300 MIN	52	26.0	37	18.5
301-350 MIN	36	18.0	61	30.5
>350 MIN	33	16.5	51	25.5

Pearson Chi-Square=25.828, df =4, p value =0.000

Table VIII shows the total duration of labour in both groups. The average total duration of labour in the group I is 290.21+/-65.43minutes. The average total duration of labour in the group II is 320.55+/-68.31minutes. The total duration of labour is less in group I patients than group II patients.

The Pearson chi-square test infers that there was a significant difference between the two groups. By the above tests it was inferred that in group I the duration was significantly shorter compared to group II.

TOTAL DURATION OF LABOUR

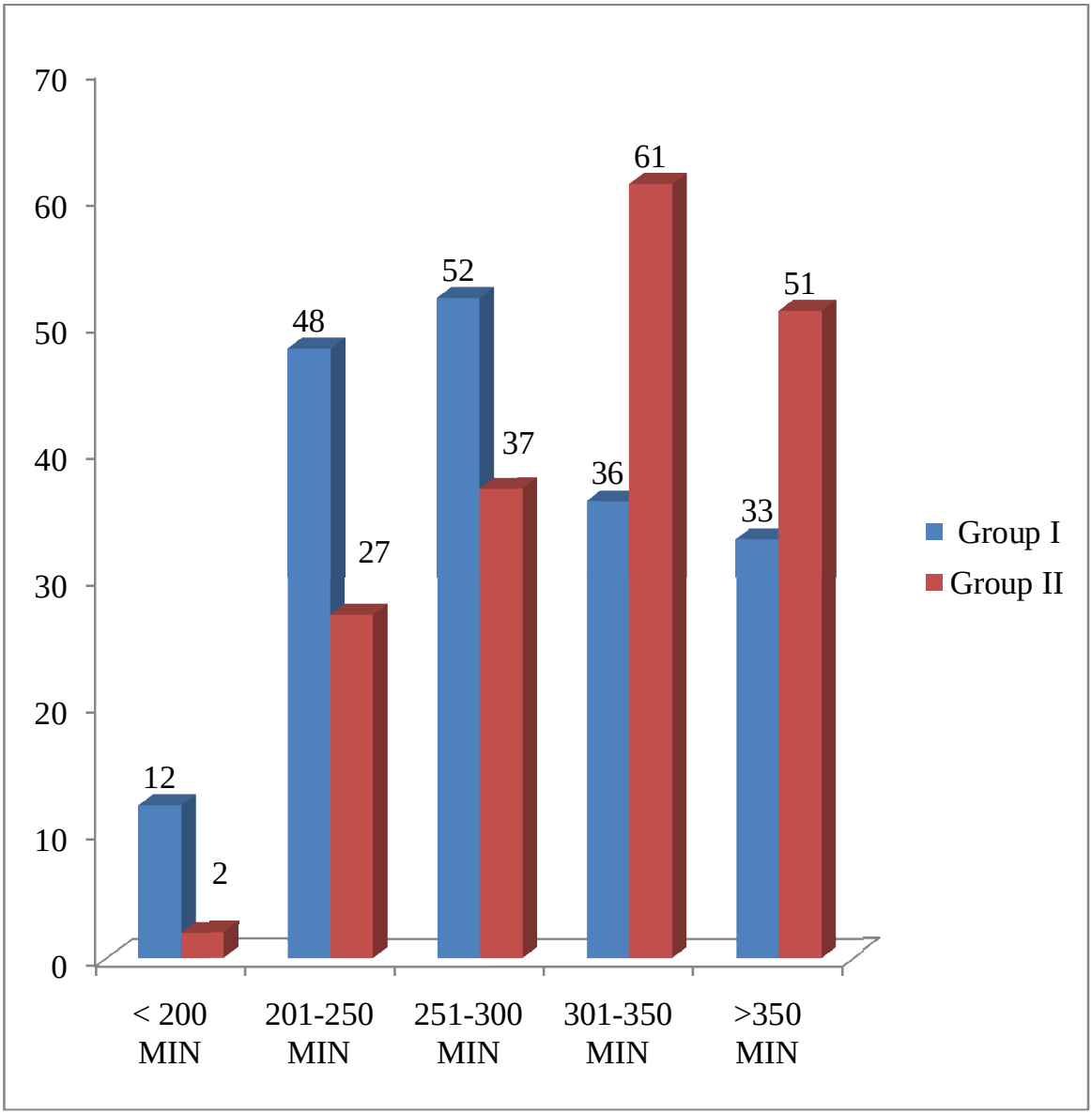


TABLE IX

MODE OF DELIVERY

MODE OF DELIVERY	Group I		Group II	
	No	**%**	**No**	**%**
FTNVD	165	82.5	167	83.5
OUTLET FORCEPS	15	7.5	11	5.5
LSCS	20	10.0	22	11.0

Pearson Chi-Square=0.723, df =2, p value=0.697

Table IX shows the various modes of delivery in the two groups. Majority of patients in group I (82.5%) had normal vaginal delivery, 83.5% of patients had normal vaginal delivery in groups II respectively. The incidence of operative vaginal delivery is also equal in both groups. The X^2 statistical test was applied and it was inferred that the number of patients who had normal vaginal delivery in both groups were statistically not significant.

MODE OF DELIVERY

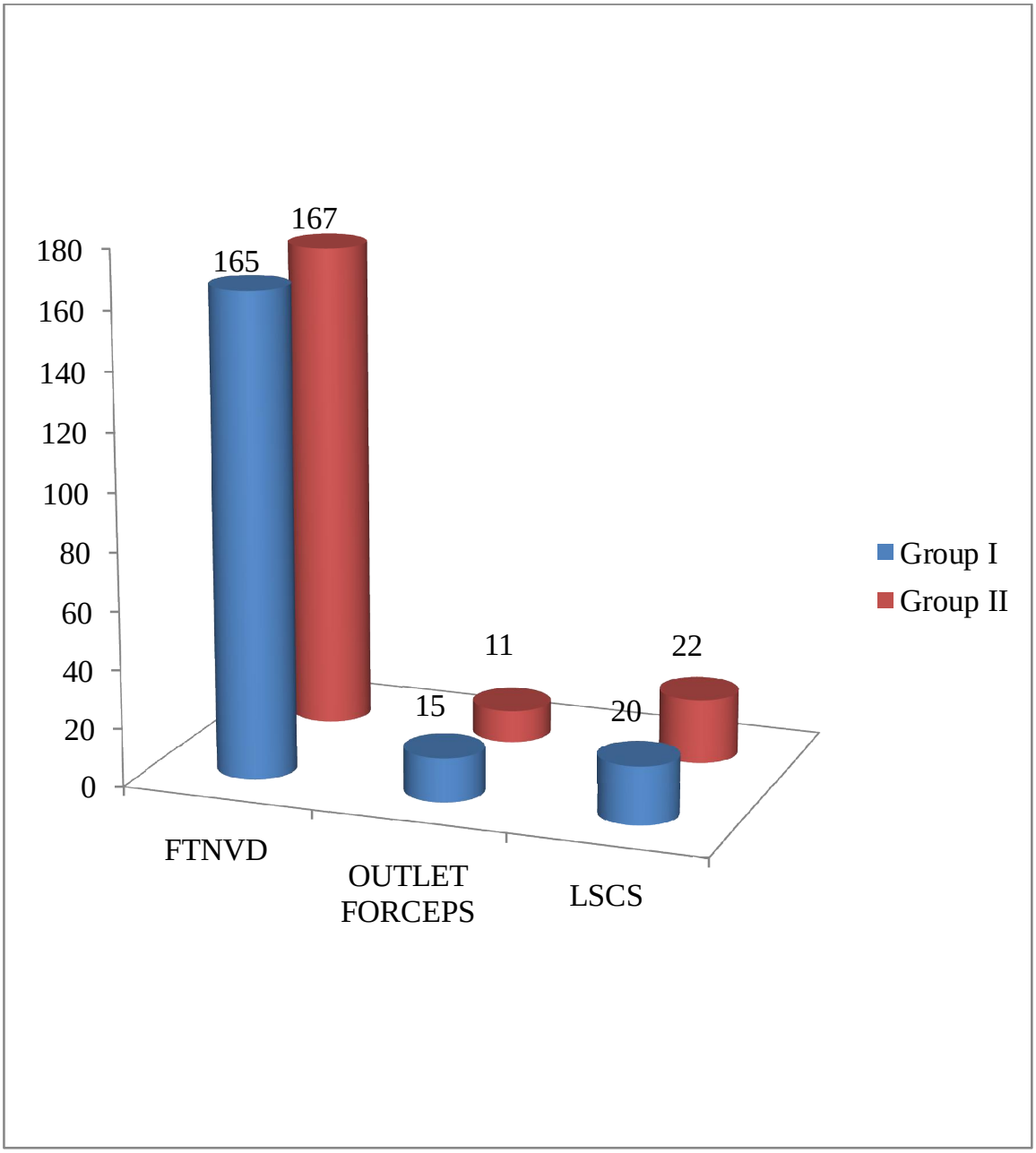


TABLE X

INDICATION FOR INSTRUMENTAL DELIVERY

INDICATIONS	Group I		Group II	
	No	**%**	**No**	**%**
FTNVD	165	82.5	168	84.0
Outlet: Fetal Distress	7	3.5	5	2.5
Outlet: Maternal Exhaustion	9	4.5	6	3.0
LSCS: fetal Distress	19	9.5	21	10.5

Pearson Chi-Square=1.060, df =3, p value=0.787

Table X shows the indications for instrumental vaginal delivery by group. 82.5% and 84% of women in groups I and II delivered by normal vaginal delivery. 3.5% of patients delivered by assisted vaginal delivery in group I for second stage foetal distress. 2.5% of patients in group II delivered by assisted vaginal delivery. Applying X^2 statistical analysis test, it was inferred that there was no difference in instrumental delivery for fetal distress in both groups. . It was similar in the two groups.

INDICATION FOR INSTRUMENTAL DELIVERY

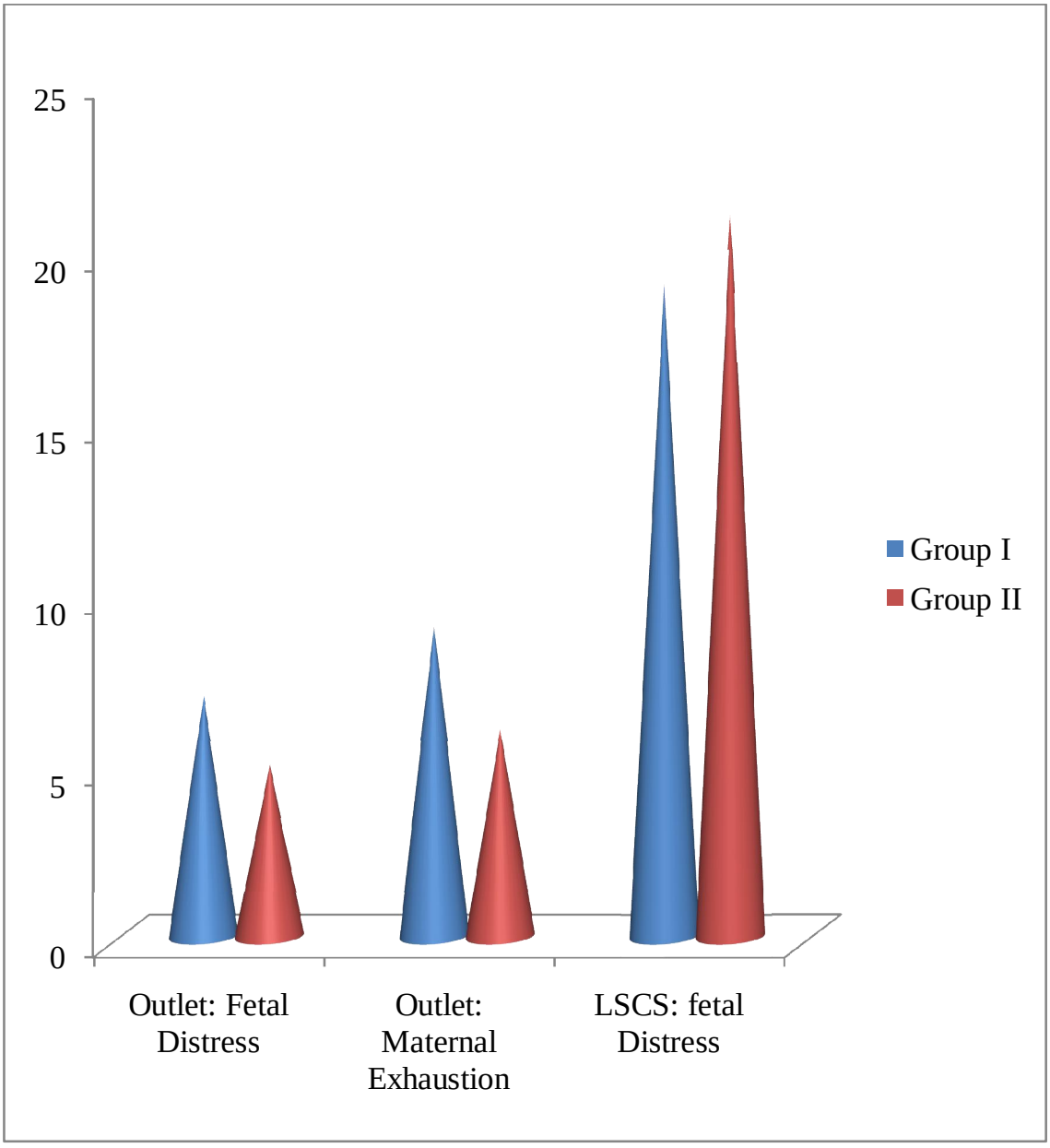


TABLE XI

BIRTH WEIGHT DISTRIBUTION

GROUP	Birth weight (KG)			S.D	t test	P value
	Min	Max	Mean			
I	2.1	3.8	2.8206	.43805	0.455	0.649
II	2.2	3.7	2.8016	.39548		

Table XI shows the birth weight by group. The mean birth weight was 2.82±0.44 and 2.80±0.39 kilograms in group I and II respectively and was statistically not significant. It was similar in the two groups.

BIRTH WEIGHT DISTRIBUTION

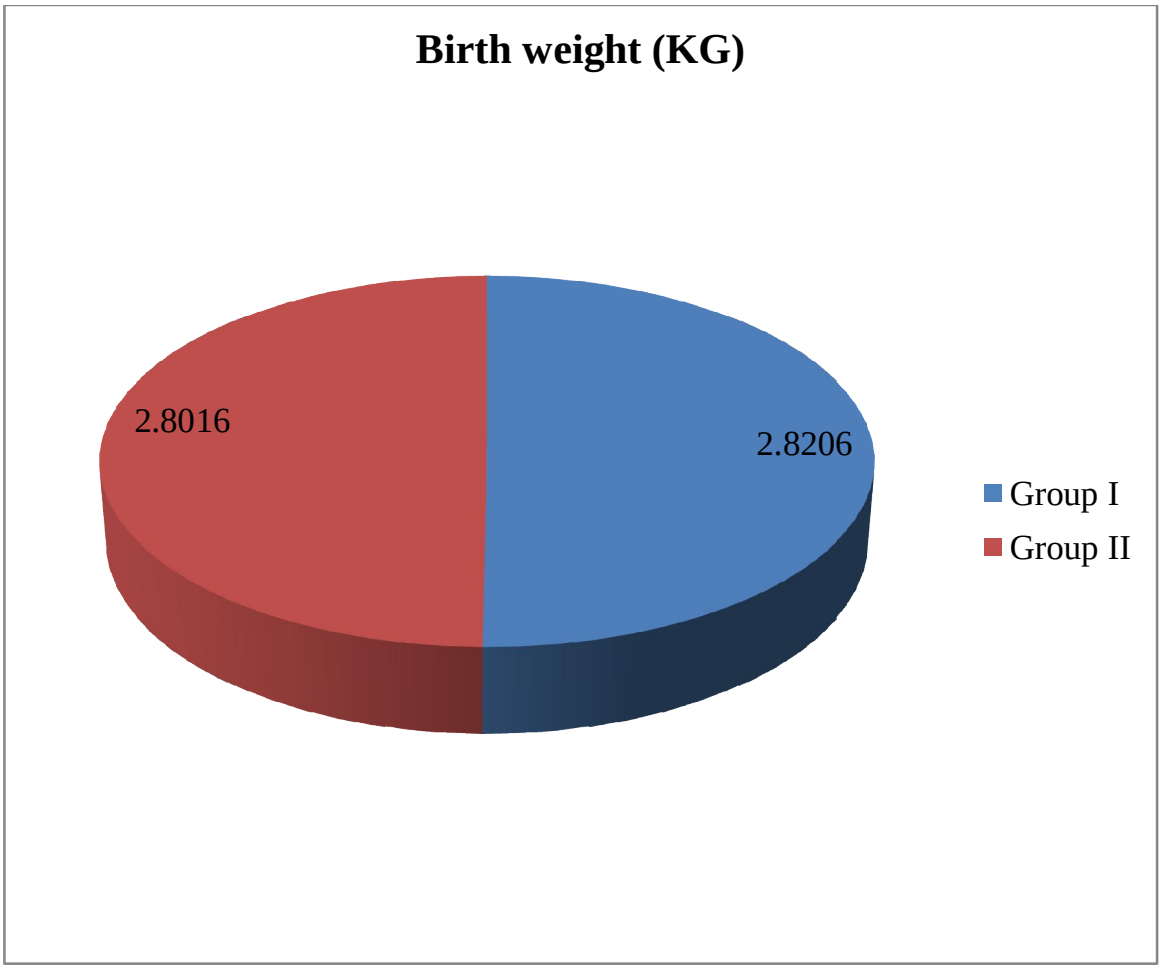


TABLE XII

EFFECT ON IMMEDIATE FETAL OUTCOME

GROUP	Apgar at 1 minute				Apgar at 5 minute			
	Min	Max	Mean	SD	Min	Max	Mean	SD
Group I	6	8	6.9550	1.07178	7	9	8.1000	.91882
Group II	6	8	7.0500	.98097	7	9	8.1900	.82297

Apgar at1minute t= 0.925 p value=0.356

Apgar at 2minute t= 1.032 p value=0.303

The table XII shows the immediate neonatal outcome in groups I and groups II. In the majority of babies in both the groups the apgar score was 7/10 at 1 min and 8/10 at 5 minutes. The t test infers that there was no significant difference in the Apgar scores in the two groups. Both the groups were similar and no statistically significant difference was noted in the two groups.

EFFECT ON IMMEDIATE FETAL OUTCOME

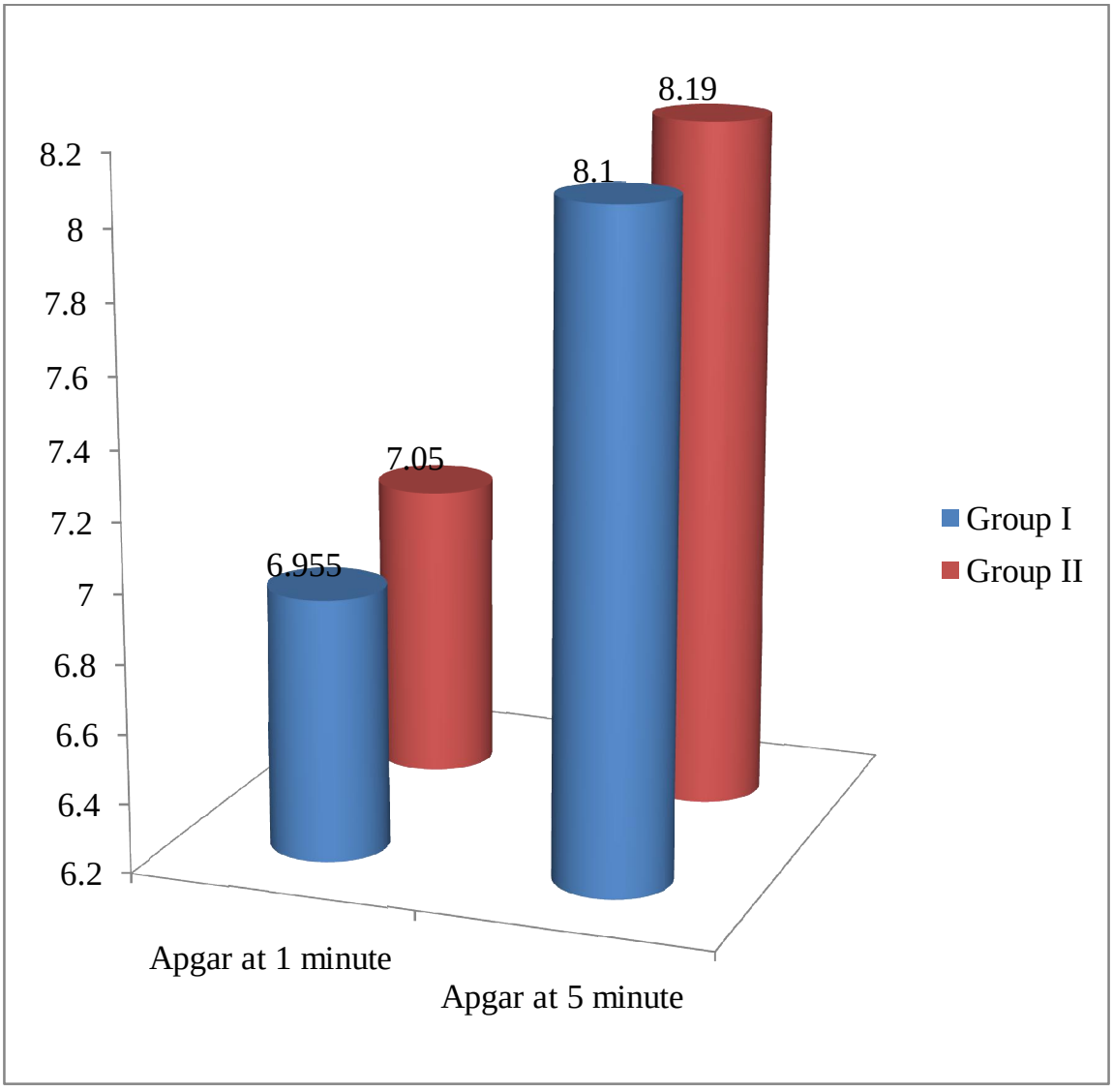


TABLE XIII

MATERNAL SIDE EFFECTS

ADVERSE EVENTS	Group I		Group II	
	No	%	No	%
NAUSEA	15	7.5	21	10.5
VOMITING	15	7.5	21	10.5
DROWSINESS	2	1.0	1	0.5
PALPITATION	0	0	0	0
HYPER SENSITIVITY	0	0	0	0
RESPIRATORY DISTRESS	2	1.0	1	0.5
FETAL TACHYCARDIA	0	0	0	0

Table XIII shows maternal side effects by group. Nausea, vomiting, drowsiness, respiratory distress are present in both groups. Maternal side effects are similar in both groups.There was no difference between the two groups in terms of the maternal side effects.

TABLE XIV

MATERNAL COMPLICATIONS

GROUPS	VAGINAL TEAR	
	No	%
I	29	14.5
II	28	14.0

Table XIV shows maternal complications in groups I and II. The maternal complications between the two groups were not statistically significant. Maternal complications like vaginal tear are similar in both groups. There was no difference between the two groups in terms of the maternal complications

MATERNAL COMPLICATIONS

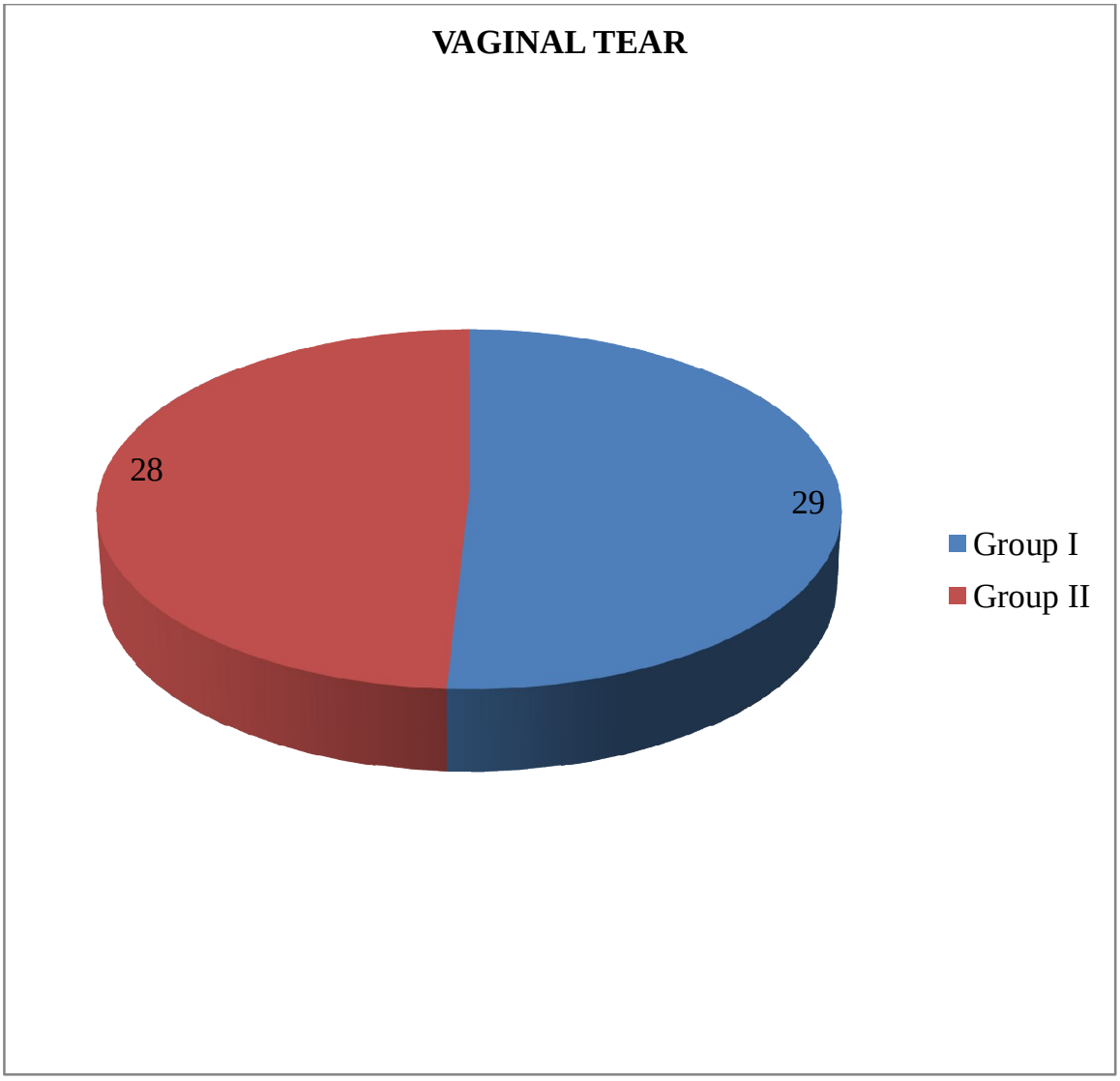


TABLE XV

NUMBER OF MEDICATION IN THE STUDY GROUP

NO OF DOSES	NO OF PATIENTS	PERCENTAGE
1	150	75.0
2	50	25.0
TOTAL	200	100.0

Table XV shows number of medications in the study group in which75% of the patients required single dose and remaining of the patients required two doses.

NUMBER OF MEDICATION IN THE STUDY GROUP

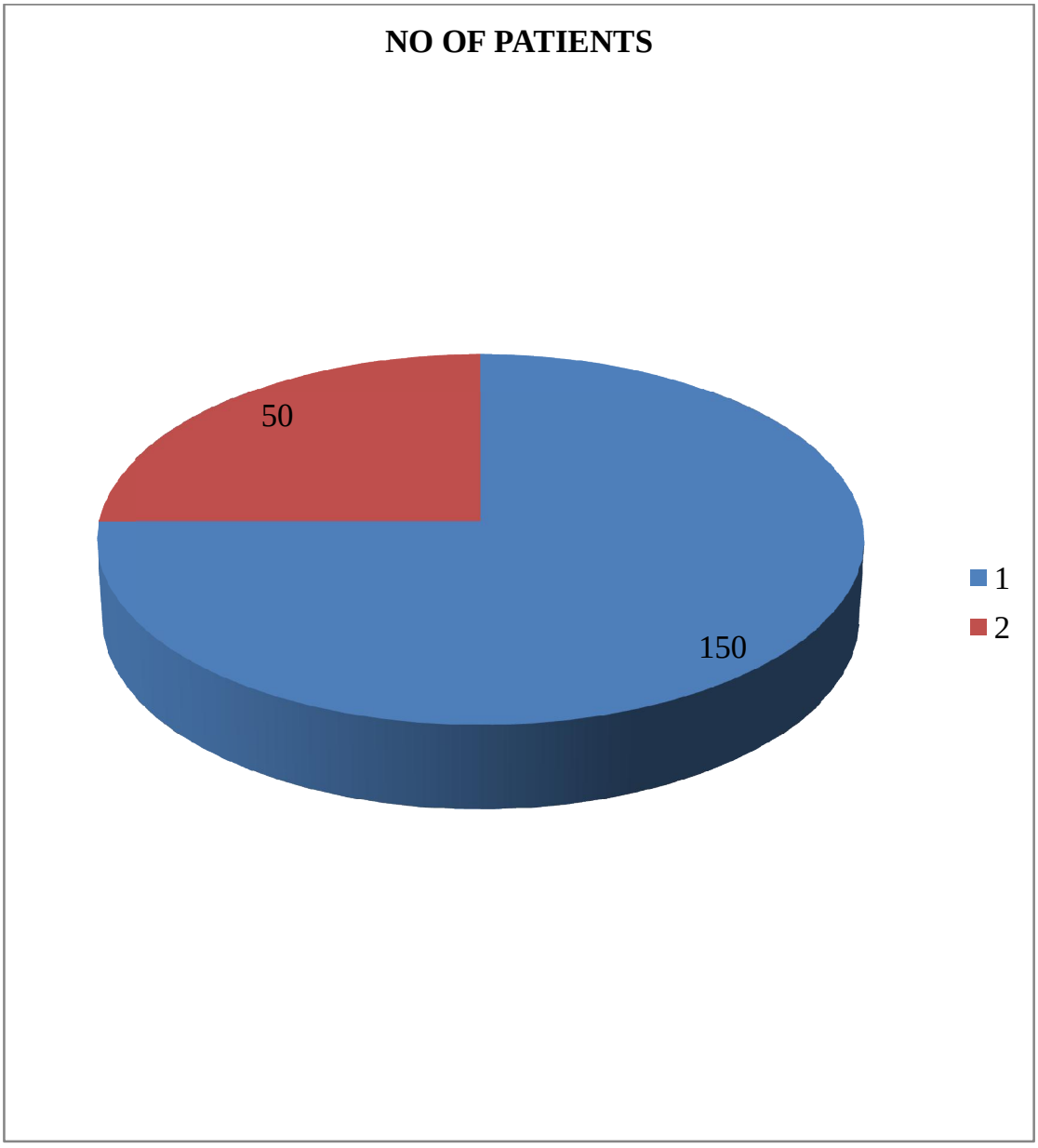


TABLE XVI

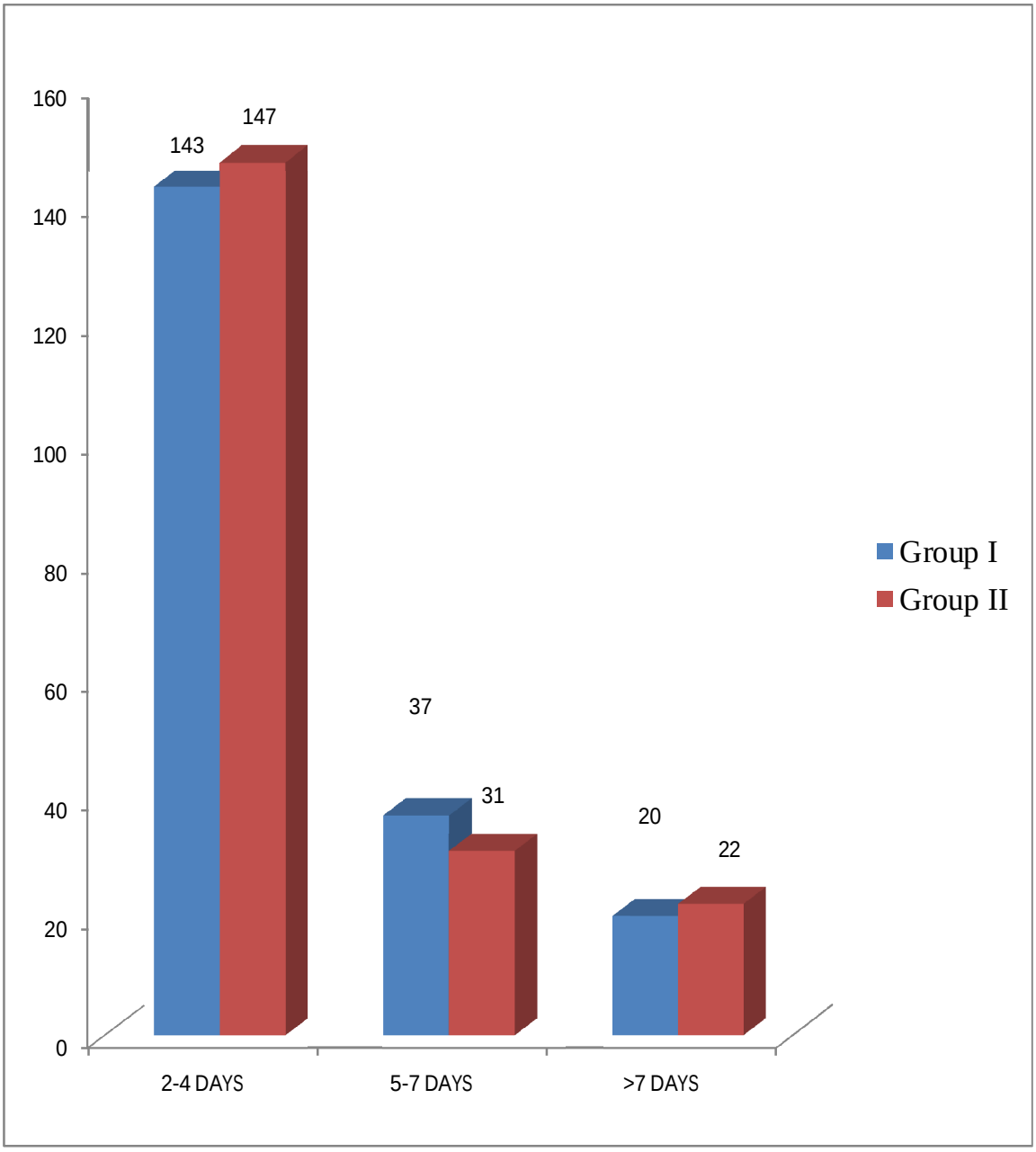
DURATION OF HOSPITAL STAY

GROUPS	2-4 DAYS	5-7 DAYS	>7 DAYS	TOTAL
I	143	37	20	200
II	147	31	22	200

Pearson Chi-Square=0.680, df =2, p value=0.712

Table XVI shows duration of hospital stay. Majority of the patients in both groups required 2-4 days of hospital stay. The chi square statistical test infers that duration distribution was similar in the two groups. The range difference between the duration in groups of I and II were statistically not significant. There was no difference between the two groups in terms of duration of hospital stay.

DURATION OF HOSPITAL STAY



DISCUSSION

An ideal method for pain relief in labour should combine safety for the mother and the foetus without any side effects and should be convenient for the patient and the attendant physician. The present study was designed to evaluate the efficacy of IM Tramadol Hydrochloride in the late latent phase of first stage of labour.

The study randomised two groups of 200 pregnant women each fulfilling the inclusion criteria.

Group I – Patients treated with IM Tramadol in latent phase of labour.

Group II – Patients who didn't receive IM Tramadol in latent phase of labour.

The two groups were standardised and compared regarding the degree of pain relief, duration of labour, mode of delivery, fetal outcome, maternal morbidity and hospital stay. The adverse effects of the drug on the mother and newborn were noted.

AGE:

The present study had an age range of 18-35 years. 53% and 50.5% of women were in age group of 21-25 years in groups I & II respectively.

The difference in the age group among the two groups was not statistically significant (p value – 0.691). There was an identical age distribution in both the groups. This was to remove any effect of age on degree of pain relief and duration of labour.

In the study by Thakur Ratna et al., [86] the mean age in years was 22 years. The mean age and the range of ages were statistically compatible with the present study (Table I). Thus Age distribution was similar to the present study.

GESTATIONAL AGE:

In the present study the gestational age, ranged between 37-40 weeks and above. 45% and 37.5% of women were in the gestational age of 39.1 – 40 weeks in the groups I and II respectively (Table II). The variation in the gestational age among the two groups was not statistically significant (p-value=0.075).This was to remove any difference in the degree of pain relief and duration of labour due to difference in the gestational age.

The mean period of gestational age was 39 weeks in the study by Nagaria Tripti et al., [83] and Sudha Patil et al., [84]. The mean gestational age and the range of gestational age were comparable with the present study.

Similar to the study by Lie et al.,[87] Viegas O A et al.,[85] Jain et al., all patients were Primigravida.

The measurement of degree of pain relief by visual analogue scale, cervical effacement and dilatation, position of the cervix and the station of the presenting part were observed by various qualified observers randomly to avoid observer bias and findings were recorded on a partogram. There was no significant difference in the effacement of the cervix, dilatation of the cervix, station of the presenting part or the position of the cervix in the two groups. Any bias relating to the above on progress of labour has been removed.

DEGREE OF PAIN RELIEF:

Onset of pain relief in the present study was 15-20 minutes. Onset of pain relief in the study by Nagaria Tripti et al.,[83] and study by Sudha Patil et al.,[84] was 15-20 minutes. The same was present in this study.

In this study 23.5% of patients had moderate pain relief, 38.5% of patients had mild pain relief and 38% of patients had no pain relief after Tramadol administration. Before drug, the mean pain score is 3.86 in stage I. After drug administration the mean pain score is 3.14 in stage I and 3.81 in stage II.

Degree of pain relief	Sudha patil	Thakur ratna	Meena jyothi	Nagaria tripti	Sarkar b, Mukho padhyay	Present study
Complete pain relief	58%	15%	54%	37%	13%	0
Moderate pain relief	30%	55%	32%	38%	38%	23.5%
Mild pain relief	12%	16%	14%	16%	45%	38.5%
No pain relief	12%	14%	0	9%	47%	38%

As shown in table V & VI, pain score is increased from stage I to stage II in group I.14.5% of patients had moderate pain, 85% of patients had severe pain. Only 85% of the study group experienced severe pain in stage II. But 100% of patients in group II experienced severe pain. This denotes statistical significance between the two groups.

This study is comparable to Sudha patil[84], Thakur ratna[86], Meena jyothi[82], Nagaria tripti[83], Sarkar B.Mukhopadhyay et al[75] studies.

Bajaj et al., [88] conducted a randomised prospective study and concluded that Tramadol gives 38.92% mean pain relief.

Jain et al., conducted a randomised control trial and compared IM Opioids like Meperidine and Tramadol's Analgesic efficacy with Epidural Analgesia and concluded that Tramadol group patients had 65% pain relief.

Li E[87] and Weng studied the efficacy of Tramadol 100mg in latent phase of labour and 67% of patients had pain relief in first stage of labour.

O Kuti et al., [89] compared Tramadol with Pentazocine in labour and concluded that mild pain relief present in 66% of patients, moderate pain relief present in 30.9% of patients in Tramadol group.

Singh et al., [80] compared 100mg IM Tramadol with Pentazocine and concluded that 80% of Tramadol group had moderate pain relief.

DURATION OF LABOUR:

The duration of latent phase of first stage of labour was calculated from the onset of regular uterine contractions to the time of cervical dilatation of 3-4cms.

In the present study the mean duration of first stage of labour in group I is 265.93+/-64.066 min (Table VII). The mean duration of first stage of labour in group II is 284.98+/-56.28 min. It was found that there was a statistically significant shortening in the duration of first stage of labour in the Tramadol group when compared to the control group (p value – 0.003).

The duration of second stage of labour also significantly reduced in group I compared to group II. No significant change was observed in the duration of Third stage of labour in the control and study group. This concluded that Tramadol will not prolong the Third stage of labour and will not produce third stage complications.

Duration of labour	Thakur ratna *et al*[86]	Nagaria tripti *et al*[83]	Khooshideh m alishahriari[69]	Sudha patil[84]	Present study
STAGE 1	4.26+/-1.62 hours	4.28+/-2.22 hours	140 min	4.15 +/- 1.68 hours	265.93+/-64.06 min
STAGE 2	11.95+/-5.8min	0.30+/-0.05 hours	25 min	0.28 +/-0.42 hours	24.89+/-11.85 min
STAGE 3	5.5+/-1.5 min	0.04+/-0.015 hours	5.06+/-0.56min	0.08+/-0.05 hours	8.83+/-3.36min

The average total duration of labour in group I is 290.21+/-65.43 min. The average total duration of labour in group II is 320.55+/-68.31mins. The total duration of labour is significantly less in group I. As shown in above table, all studies conducted by Thakur ratna et al[86]., Nagaria tripti et al[83]., Khooshideh m, ali shahriari[69]et al., Sudha patil et al[84]., Mukhopadhyay AK[75] ., Sarkar B ., Suvonnakote et al., concluded that IM Tramadol reduces the duration of labour. It may be hence summarised that Tramadol is effective in shortening the duration of labour.

MODE OF DELIVERY

Mode of delivery	Thakur Ratna *et al* [86]	Nagaria Tripti *et al*[83]	O Kuti *et al* [89]	Sudha Patil [84]	Present study
FTNVD	98%	93%	88.1%	90%	82.5%
LSCS	0	3%	9.5%	4%	10.0%
Instrumental delivery	2%	4%	2.4%	6%	7.5%

In the present study spontaneous vaginal delivery occurred in 82.5% of women in Tramadol group and 83.5% of women in control group (Table IX). Only 7.5% in Group I and 5.5% in Group II had instrumental vaginal delivery in the form of forceps application. The indications were second stage foetal distress, 3.5% in Group I, 2.5% in Group II and Maternal exhaustion 4.5% in Group I and 3% in Group II (Table X).

The percentage of caesarean section was 10% in Group I and 10.5% in Group II. No significant difference was noted in the mode of delivery in both groups.

NEONATAL OUTCOME:

BIRTH WEIGHT: The mean birth weight was 2.82+/-0.44 and 2.80+/-0.39 kg in Group I and II respectively. It was not statistically significant, p value- 0.649 (Table XI).

This is to remove any influence of the mean birth weight on the rate of cervical dilatation, cephalopelvic disproportion and dystocia which would indirectly influence the duration of first stage of labour and the total duration of labour.

APGAR: The mean APGAR scores at 5minutes are 8.1+/-0.92 and 8.2+\-0.82 in Groups I and II respectively (Table XII). The difference among the two groups was not statistically significant (p value = 0.303).

In the Bajaj P et al., study, the Apgar score was 8-10 at 5minutes in all the babies. The result of the referral study was comparable to the present study, which indicates that the drugs have no effect on the foetus.

MATERNAL SIDE-EFFECTS:

Side Effects	Thakur Ratna *et al*[86]	Nagaria Tripti *et al*[83]	O Kuti *et al*[89]	Bajaj P *et al*[88]	Khooshideh *et al* [69]	Present study
Nausea	7%	11%	-	22.2%	15%	7.5%
Vomiting	3%	4%	2.4%	-	-	7.5%
Drowsiness	2%	1%	14.3%	11.11%	29%	1.0%
Palpitation	1%	-	-	-	-	-
Hyper sensitivity	-	-	-	-	-	-
Dry mouth	10%	-	-	-	-	-

The various side-effects observed were Nausea, Vomiting and Drowsiness. All these maternal side-effects are similar in both groups (Table XIII). It concluded that Tramadol will not produce any adverse effects.

MATERNAL COMPLICATIONS:

Of the maternal complications, vaginal tear was noted in 29 and 28 patients in group I & II (table XIV). No difference was noted between the two groups in terms of maternal complications.

NUMBER OF DOSES REQUIRED:

75% of the patients in the study group required only a single dose and 25% of the patients required a second dose (Table XV). No study observed the number of doses required and hence no comparison between referral studies was attempted.

DURATION OF HOSPITAL STAY:

Majority of the patients in both groups required 2-4 days of hospital stay. The range difference between the duration of hospital stay in groups I and II were statistically not significant. There was no difference between the two groups in terms of duration of hospital stay. This concludes that Tramadol does not have any influence in duration of hospital stay.

SUMMARY

This prospective study was undertaken in the Department of Obstetrics and Gynaecology, Stanley Medical College, RSRM Lying-in Hospital during the period of October 2012 to November 2013.

400 Women who were in late latent phase of first stage of labour were selected for the study. They were randomly divided into two groups.

Group I- consisted of 200 women who were given 100 mg IM Tramadol in late latent phase of labour and second dose was repeated after 2hours in patients with severe pain who were not entered into the second stage.

Group II- consisting of 200 women served as control.

This study was conducted with the aim of proving that IM Tramadol Hydrochloride was effective in pain relief in first stage of labour and it also shortened the duration of labour.

In this study,

- Majority of women were between 21-25 years of age. Majority were found to be between 39.1-40 weeks of gestation. There was no statistically significant difference in the age distribution and gestational age among the two groups.

- Numerical Pain Intensity Scale was used to assess the degree of pain relief.

- After Tramadol administration the pain score in Stage I was significantly reduced (p value <0.0001).

- In this study 23.5% of patients had moderate pain relief, 38.5% of patients had mild pain relief and 38% of patients had no pain relief after Tramadol administration. Before drug, the mean pain score is 3.86 in stage I. After drug administration the mean pain score is 3.14 in stage I and 3.81 in stage II.

- Pain score is increased from stage I to stage II in group I. 14.5% of patients had moderate pain, 85% of patients had severe pain. Only 85% of the study group experienced severe pain in stage II. But 100% of patients in group II experienced severe pain. This denotes statistical significance between the two groups.

- The Mean duration of first stage of labour was 265.93+/-64.06 and 284.98+/-56.28 minutes in group I & II respectively (p value=0.003). The Mean duration of second stage of labour was 24.89+/-11.86 and 28.21+/-12.89 in groups I & II respectively (p value= 0.012). There was a statistically significant shortening in

the duration of first and second stage of labour. The duration of third stage of labour was not significantly different among the two groups.

- The total duration of labour was 290.21+/-65.43 and 320.55+/-68.31 minutes in groups I & II. The total duration was significantly shorter in group I (p value <0.0001).

- No significant difference was noted in the mode of delivery in both groups.

- Neonatal outcome was not different in two groups. There were no cases of perinatal mortality or admission to Neonatal Intensive Care Unit.

- Maternal side-effects like nausea, vomiting and drowsiness are similar in both groups. Hence statistically not significant.

- Maternal morbidity, duration of hospital stay and number of medication required were not increased in group I.

CONCLUSION

1) IM Tramadol Hydrochloride is effective in pain relief in first stage of labour and also it shortens the duration of first & second stage of labour.

2) Tramadol didn't affect the duration of third stage of labour.

3) Tramadol caused no major increase in instrumental or caesarean section rates.

4) Tramadol had no significant maternal or fetal side effect. It was found to be safe for both mother and baby.

5) Tramadol didn't increase maternal morbidity and duration of hospital stay; hence the drug is cost effective.

SUGGESTION

Further studies in IM Tramadol Hydrochloride to decrease the pain score and duration of First Stage of Labour, to improve the fetal outcome and to decrease the Maternal Morbidity, should be instituted to enable this drug to be included in first line protocol in management of First Stage of Labour.

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PROFORMA

Sl.No. IP No.

Name: Date of Admission & Time:

W/o: Date of Delivery & Time :

Age: Booked / Unbooked :

Occupation:

Address:

Chief Complaints:

History of present Illness: H/o…… Amenorrhea

C/o Labour pains ---------- hrs

H/o Leak PV/Bleeding PV------hrs

Other complaints

Menstrual History: LMP: EDD:

Previous Menstrual Cycle: Menarche:

Regular/Irregular

Days flow

Duration of Cycle Associated complaints

Obstetric History: Primigravida 1st Trimester

2nd Trimester

3rd Trimester

Past History: HTN/DM/TB/Asthma/Heart Disease/Drug Allergy

Family History: HTN/DM/TB/Asthma/Heart Disease/Dug Allergy

Personal History:

Diet:	Bowel:
Appetite:	Bladder:
Sleep:	Habits:

General Physical Examination: Height_____ Cms Weight____ Kgs

Built_____ Nourishment _____

Vital Data: Pulse: **General examination:** Pallor:

BP: Icterus:

Temp: Pedal Edema:

RR: Lymphadenopathy:

Thyroid swelling:

Systemic Examination: CVS:

RS:

CNS:

Obstetric Examination:

P/A Uterus_____ wks: Acting/Relaxed/Irritable

Longitudinal lie/cephalic presentation EFW:

Head_____

FHR_____

Clinically Liquor Adequate

PV: Cervix

Dilatation

Membranes Present/Absent

Liquor color:

Vx Station:

Pelvic Assessment:

Investigation: Hb% **Urine:** Albumin

Blood group & Rh-typing Sugar:

HIV, VDRL, HbsAg Microscopy:

RBS Urea Creatinine

CTG

Ultra sonogram:

BPD:
FL:
HC:
AC:
PLACENTA:
LIQUOR:

		Administration of the drug			
	Before	**After (Second hourly)**			
Contractions					
FHS					

		Administration of the drug				
	Before	**After (Second hourly)**				
Dilatation						
Length						
Position						
Consistency						
Station						
Membranes						

Degree of pain after drug administration by NPI Scale

	1st Stage	2nd Stage
Grade-1	No pain	
Grade-II	Mild pain but comfortable	
Grade-III	Moderate pain with discomfort	
Grade-IV	Severe pain/maximum pain	

Mode of delivery

Vaginal delivery (Episiotomy/Outlet Forceps/Vacuum extraction/LSCS)

Placenta + Membrane weight:

Time taken for the delivery

1st Stage
2nd Stage
3rd Stage
Total duration of labour
Drug delivery interval

Neonatal outcome:

Live born: Born alive & Dead Still born

APGAR-1' 5' 8' 10'

Sex of baby M/F

Birth wt in kg

Neonatal morbidity Yes No

Admission to NICU: Yes No

Reason:

Duration of admission:

Condition at discharge:

Adverse Effect of Drugs:

Nausea	Vomiting	Respiratory Depression	Fetal tachycardia/ Bradycardia
Present/Absent	Present/Absent	Present/Absent	Present/Absent

Name & Signature of Guide

Professor
Dept. of OG
Stanley Medical College,
Chennai

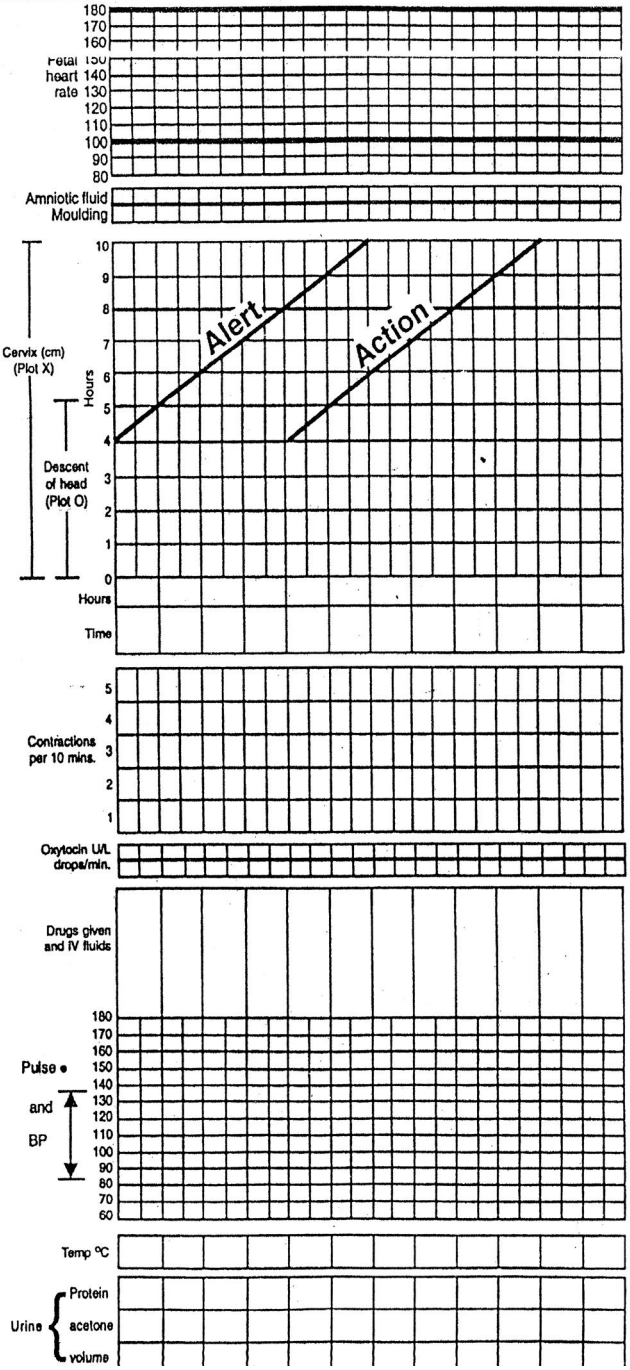
Name & Signature of PG
Date:
Time:

Name & Signature of Co/Guide

PARTOGRAPH

Name Gravida Para. Hospital no.

Date of admission Time of admission Ruptured membranes hours



ABBREVIATIONS USED

APH - Ante Partum hemorrhage

ACOG - American College of Obstetrics and Gynaecology

ACTH - Adreno Cortico Tropic Hormone

AP - Apgar

1^0 -1 minute

5^0 -5 minute

B.W. - Birth Weight

BP - Blood Pressure

C -Control

CPD -Cephalo Pelvic Disproportion

CTG - Cardio Toco Gram

FD - Fetal Distress

FTNVD - Full Term Normal Vaginal Delivery

GA - Gestational Age

HS - Hospital Stay

IM - Intra Muscular

I V - Intra Venous

LSCS - Lower Segment Caesarean Section

MC - Maternal Complication

ME - Maternal Exhaustion

NPI - Numeric Pain Intensity Scale

NSAIDS - Non Steroidal Anti Inflammatory Drugs

PS - Pain Score

SD - Standard Deviation

TENS - Trans Cutaneous Electric Nerve Stimulation

VAS - Visual Analogue Scale

VT - Vaginal Tear

VRS - Verbal Rating Scale

INSTITUTIONAL ETHICAL COMMITTEE, STANLEY MEDICAL COLLEGE, CHENNAI-1

Title of the Work : A study of efficacy of intramascular injection tramadol as Labour analgesia and labour accelerator in 400 Primigravida patients in latent phase of first stage of Labour

Principal Investigator : Dr.N.Muthulakshmi

Designation : PG in MS(OG)

Department : Department of OG
Government Stanley Medical College,
Chennai-1

The request for an approval from the Institutional Ethical Committee (IEC) was considered on the IEC meeting held on 08.04.2013 at the Council Hall, Stanley Medical College, Chennai-1 at 2PM

The members of the Committee, the secretary and the Chairman are pleased to approve the proposed work mentioned above, submitted by the principal investigator.

The Principal investigator and their team are directed to adhere to the guidelines given below:

1. You should inform the IEC in case of changes in study procedure, site investigator investigation or guide or any other changes.
2. You should not deviate from the area of the work for which you applied for ethical clearance.
3. You should inform the IEC immediately, in case of any adverse events or serious adverse reaction.
4. You should abide to the rules and regulation of the institution(s).
5. You should complete the work within the specified period and if any extension of time is required, you should apply for permission again and do the work.
6. You should submit the summary of the work to the ethical committee on completion of the work.

12/8/13

MEMBER SECRETARY,
IEC, SMC, CHENNAI

354	Valliammal	26	4449	39+5	1	10	9	7	300	24	6	330	FTNVD	1		3	NO	NO	NO	NO	7	8	VT	5
355	Saraswathy	20	4470	40+5	2	10		10	280	20	10	310	OUTLET		ME	2.7	NO	NO	NO	NO	7	8	VT	5
356	Nirsha	21	4497	39+3	1	9	10	10	200	33	7	240	OUTLET	1	ME	3.5	NO	NO	NO	NO	7	8	VT	5
357	Pushpalatha	21	4501	39+1	2	10		9	260	15	10	285	FTNVD			2.8	NO	NO	NO	NO	7	9		3
358	Lakshmi	19	4512	39+2	2	9		9	230	20	10	260	FTNVD			3	NO	NO	NO	NO	7	8		3
359	jayalakshmi	25	4530	38+1	1	9	3	10	260	15	5	280	FTNVD	1		2.3	NO	NO	NO	NO	8	8		3
360	Asima	22	4561	38+5	1	9	3	9	240	35	5	280	FTNVD	1		2.75	NO	NO	NO	NO	7	8		3
361	Valli	19	4586	40	2	10		10	320	30	10	360	FTNVD			3.3	NO	NO	NO	NO	7	8		3
362	Nalini	23	4599	37+6	2	10		10	240	15	5	260	FTNVD			3.2	NO	NO	NO	NO	7	8		3
363	Maythili	19	4620	38+5	1	9	4	8	300	40	20	360	FTNVD	2		2.1	YES	NO	NO	NO	7	8		3
364	Devi	20	4635	38+1	2	10		10	260	25	10	295	FTNVD			2.5	NO	NO	NO	NO	7	9		3
365	Sangeetha	24	4650	39+3	1	9	6	10	310	25	10	345	FTNVD	2		2.65	NO	NO	NO	NO	6	7		3
366	Valli	25	4682	39+1	2	10		9	300	55	10	365	FTNVD			2.4	NO	NO	NO	NO	7	9		3
367	Vijaylakshmi	25	4700	39+1	1	8	6	8					LSCS	1	FD	2.6	NO	NO	NO	YES	7	8		8
368	Bhavani	19	4721	38+5	1	10	5	10	220	17	13	250	FTNVD	1		2.75	NO	NO	NO	NO	7	7		3
369	Gayathri	21	4735	38+1	1	9	6	9	360	38	12	410	FTNVD	2		2.55	NO	NO	NO	NO	7	8		3
370	Jamuna	19	4762	38+5	2	10		10	240	28	12	280	FTNVD			2.4	NO	NO	NO	NO	7	9		3
371	Dhanalakshmi	23	4785	38+1	1	10	9	10	300	19	13	332	FTNVD	2		2.7	NO	NO	NO	NO	7	8		3
372	Yamuna	19	4802	39	1	9	8	10	320	30	10	360	FTNVD	2		3.2	NO	NO	NO	NO	7	8		3
373	Renuka	26	4830	38+2	2	10		10	200	20	10	230	OUTLET		ME	2.4	NO	NO	NO	NO	7	9	VT	5
374	Deepa	25	4861	39+2	1	9	8	7	180	25	10	215	FTNVD	1		3.2	NO	NO	NO	NO	7	8		3
375	Roja	20	4885	39+5	2	10		9	360	26	14	400	FTNVD			3.2	NO	NO	NO	NO	7	9		3
376	Nagavalli	25	4896	40+1	1	9	8	8					LSCS	1	FD	3.2	YES	NO	NO	NO	7	8		8
377	Revathy	22	4912	39+1	2	8		9					LSCS		FD	2.2	NO	NO	NO	NO	7	9		8
378	Prabahavathy	20	4931	38+3	1	9	6	10	300	28	12	340	FTNVD	1		3.45	NO	NO	NO	NO	7	9	VT	5
379	Deepa	22	4951	39+2	1	10	6	8	360	20	10	390	FTNVD	1		2.95	YES	NO	NO	NO	7	9		3
380	Ramya	27	5346	38+1	1	10	6	9	280	10	5	295	FTNVD	1		2.75	NO	NO	NO	NO	7	9		3
381	Sreedevi	29	5368	38+6	1	10	6	10	340	30	10	380	FTNVD	2		3.2	NO	NO	NO	NO	7	8		3
382	Rupavadi	19	5365	39+1	2	8		9	220	10	10	240	FTNVD			2.75	NO	NO	NO	NO	7	9		3
383	Prema	23	5399	38+2	2	8		9	270	30	15	315	FTNVD			2.25	NO	NO	NO	NO	8	9		3
384	Poovizhi	20	5401	39+1	1	7	7	10					LSCS	1	FD	2.9	NO	NO	NO	NO	7	8		8
385	Shivaranjani	21	5415	38+6	2	9		9					LSCS		FD	2.6	NO	NO	NO	NO	7	9		8
386	Suleha	23	5462	39+2	2	10		9	270	25	5	300	FTNVD			3.5	NO	NO	NO	NO	8	9		3
387	Seetha	21	5480	38+6	2	9		10					LSCS		FD	3.5	YES	NO	NO	NO	7	8		8
388	Buvaneshwari	23	5491	39+3	2	9		8					LSCS		FD	2.25	NO	NO	NO	NO	6	7		8
389	Kanimozhi	21	5503	39+1	1	10	7	10	260	24	6	290	FTNVD	1		2.75	NO	NO	NO	NO	7	8		3
390	Sussikala	25	5515	39+6	1	8	10	7					LSCS	1	FD	3.3	NO	NO	NO	NO	7	8		8
391	Sangeetha	21	5540	39+2	1	10	9	8	240	25	10	275	FTNVD	1		3	NO	NO	NO	NO	7	9		3
392	Vidyavathi	31	5557	37+1	2	10		8	310	17	5	332	FTNVD			2.8	YES	NO	NO	NO	7	7		3
393	Padmavathi	25	5590	40	2	9		8					LSCS		FD	2.7	NO	NO	NO	NO	6	8		8
394	Hemavathi	21	5601	39+5	1	9	8	10	200	25	5	230	FTNVD	1		2.6	NO	NO	NO	NO	7	9		3
395	Inbailavarasi	27	5612	38+3	2	10		8	320	60	10	390	FTNVD			3.5	NO	NO	NO	NO	7	8		3
396	Suganya	21	5617	37+2	1	10	9	9	400	25	5	430	FTNVD	1		3.5	NO	NO	NO	NO	7	9		3
397	Sangeetha	24	5623	39+3	1	9	10	8	240	12	8	260	FTNVD	1		3.45	NO	NO	NO	NO	8	9		3
398	Priyamani	22	5637	37+4	1	10	10	10	280	30	7	317	FTNVD	1		3	NO	NO	NO	NO	6	9		3
399	Nandhini	21	5639	40+3	2	9		8	220	25	10	255	OUTLET		FD	2.2	NO	NO	NO	NO	8	8	VT	5
400	Vasanthi	18	5640	39+6	1	9	10	7	280	15	10	305	FTNVD	1		2.75	NO	NO	NO	NO	6	9		3

303	swapna	18	3547	39+4	1	9	9	8	280	30	7	317	FTNVD	1		3	NO	NO	NO	NO	6	7		3
304	priya	20	3513	38+6	1	9	8	9	220	25	10	255	FTNVD	1		2.2	NO	NO	NO	NO	8	8	VT	5
305	revathy	20	3592	37+1	2	9		10	280	15	10	305	FTNVD			2.75	NO	NO	NO	NO	6	7	VT	5
306	dhivya	20	3638	39+2	1	9	10	7	290	13	5	308	FTNVD	1		2.8	NO	NO	NO	NO	7	8		3
307	vennila	20	3627	40+5	2	9		9	310	35	5	350	FTNVD			2.75	NO	NO	NO	NO	7	7		3
308	surya	20	3442	38+1	1	10	7	10	200	10	5	215	FTNVD	1		3.2	NO	NO	NO	NO	6	9		3
309	padmapriya	23	3683	40+1	1	10	7	10	180	10	4	194	FTNVD	1		3.5	YES	NO	NO	NO	7	9		3
310	revathy	20	3689	37+3	2	10		10	220	25	10	255	FTNVD			2.3	NO	NO	NO	NO	7	7		3
311	nirmala	22	3685	39+5	1	9	7	8	280	30	10	320	FTNVD	2		2.5	NO	NO	NO	NO	7	9	VT	5
312	subha	22	3723	39+4	1	9	7	10	290	18	5	313	FTNVD	1		2.8	NO	NO	NO	NO	7	9		3
313	poongodi	23	3611	38+6	2	10		9	280	15	5	300	FTNVD			2.7	NO	NO	NO	NO	7	7		3
314	sudha	23	3764	39+1	1	9	7	9	270	15	5	290	FTNVD	1		3.3	NO	NO	NO	NO	7	9		3
315	Maheshwari	21	3806	38+2	1	10	7	7	320	65	10	395	FTNVD	1		3.2	NO	NO	NO	NO	8	9		3
316	vijayalakshmi	20	3799	37+2	2	8		9	300	18	12	330	FTNVD			2.6	YES	NO	NO	NO	7	7		3
317	saranya	20	3786	37+6	2	10		10	320	25	5	350	FTNVD			2.9	NO	NO	NO	NO	6	7		3
318	grace	24	3745	39+2	1	10	7	10	200	15	5	220	OUTLET	1	FD	3	NO	NO	NO	NO	8	9	VT	5
319	susila	22	3866	37+2	2	10		10	320	45	10	375	FTNVD			2.55	NO	NO	NO	NO	6	7		3
320	Megala	18	3830	38+4	2	10		10	200	18	10	228	FTNVD			3.2	NO	NO	NO	NO	7	7		3
321	kalaimathypriya	24	3885	38+4	2	10		9	300	44	18	362	FTNVD			2.7	NO	NO	NO	NO	7	8		3
322	sharmila	20	3861	38+4	1	10	7	9	270	15	5	290	FTNVD	1		3.1	NO	NO	NO	NO	7	8		3
323	banu	18	3908	38+6	2	10		10	210	21	7	238	FTNVD			2.56	NO	NO	NO	NO	7	8		3
324	nalini	20	3889	40+2	1	9	7	7	300	18	6	324	FTNVD	2		2.8	NO	NO	NO	NO	8	7		3
325	malathy	26	3961	37+2	2	10		9	230	32	10	272	FTNVD			3.5	NO	NO	NO	NO	6	7		3
326	kamatchi	23	3976	39	2	9		10	220	30	5	255	FTNVD			2.9	NO	NO	NO	NO	6	8		3
327	priya	22	3983	38+2	1	10	10	8	200	20	5	245	FTNVD	1		2.7	NO	NO	NO	NO	7	8		3
328	sowmiya	20	3955	39+4	2	10		9	300	49	7	356	FTNVD			2.7	NO	NO	NO	NO	7	8		3
329	deepika	22	3993	37+2	1	10	9	10	420	40	10	470	FTNVD	1		3	NO	NO	NO	NO	8	7		3
330	jayachitra	21	3950	40	1	9	8	10	180	10	10	200	FTNVD	1		2.9	NO	NO	NO	NO	7	8		3
331	punitha	24	3986	39+1	2	10		10	360	31	17	408	OUTLET		ME	2.5	NO	NO	NO	NO	7	8	VT	5
332	azhagurani	18	4029	38+2	2	9		9	280	24	12	316	FTNVD			2.6	NO	NO	NO	NO	7	8		3
333	joy	19	4061	39+1	2	9		10	240	20	5	265	FTNVD			3	NO	NO	NO	NO	7	8		3
334	Mariya	20	4095	37+5	1	10	8	8	375	65	10	450	FTNVD	2		2.5	NO	NO	NO	NO	7	8		3
335	Kowsalya	20	4108	38+3	1	10	10	10	180	15	10	205	FTNVD	1		2.75	NO	NO	NO	NO	7	8		3
336	Subathra	20	4125	39+6	2	10		9	360	30	10	400	FTNVD			3.2	YES	NO	NO	NO	6	9		3
337	bharathy	25	4142	39	2	10		10	210	20	10	240	FTNVD			2.6	NO	NO	NO	NO	7	8		3
338	Muthurani	18	4160	38+2	1	10	8	9	380	45	20	445	FTNVD	2		3	NO	NO	NO	NO	8	9		3
339	Shaina banu	20	4184	40+2	1	10	7	7	380	28	10	418	OUTLET	2	FD	2.75	NO	NO	NO	NO	7	9		5
340	Nasseer fathima	24	4200	40	2	10		9	260	22	10	292	FTNVD			2.25	NO	NO	NO	NO	7	8		3
341	Ashifa	25	4217	39+4	2	10		10	400	38	18	456	FTNVD			3	NO	NO	NO	NO	6	9		3
342	Geetha	20	4230	39+3	1	10	7	10	420	40	10	470	FTNVD	2		2.8	NO	NO	NO	NO	8	9		3
343	Vetriselvi	21	4246	39+2	1	9	7	10	320	46	8	374	FTNVD	2		2.9	NO	NO	NO	NO	7	9	VT	5
344	Annaporni	25	4264	39+2	2	10		10	240	30	10	280	FTNVD			3.25	NO	NO	NO	NO	7	9		3
345	Mariammal	21	4281	40+2	1	10	10	9	290	26	5	321	FTNVD	1		2.9	NO	NO	NO	NO	8	9	VT	5
346	Gayathri	20	4300	39+1	2	10		9	280	20	10	310	FTNVD			2.8	YES	NO	NO	NO	7	9		3
347	Raji	21	4315	38	1	9	7	10	320	65	10	395	FTNVD	2		3	NO	NO	NO	NO	8	9		3
348	bharathy	20	4331	39+4	1	8	10	8	240	19	7	266	FTNVD	1		2.75	NO	NO	NO	NO	7	8		3
349	Snadhiya	20	4350	37+6	2	9		9					LSCS		FD	2.4	NO	NO	NO	NO	7	9		8
350	Rajeshwari	35	4371	38	1	10	7	8	200	26	8	234	FTNVD	1		2.65	NO	NO	NO	NO	8	7	VT	5
351	Shanmuga priya	21	4394	38+3	2	10		9	220	20	10	250	FTNVD			2.6	NO	NO	NO	NO	7	9		3
352	Mohanambal	25	4402	38+2	1	10	8	9	270	21	17	308	OUTLET	1	FD	2.9	NO	NO	NO	NO	7	8		5
353	Geetha	22	4421	39+1	2	10		10	335	48	10	393	FTNVD			2.5	NO	NO	NO	NO	7	9	VT	5

252	Vasugi	23	7283	38+2	2	9		10	320	65	10	395	OUTLET		FD	3	NO	NO	NO	NO	7	9		5
253	Rajakumari	20	7295	38+2	1	8	7	10	240	19	7	266	FTNVD	1		2.75	NO	NO	NO	NO	7	7	VT	5
254	Muthulakshmi	28	7306	39+4	1	8	8	8					LSCS	1	FD	2.4	NO	NO	NO	NO	7	8		8
255	Kathabeevi	26	7315	40+1	1	10	8	9	200	26	8	234	FTNVD	1		2.65	NO	NO	NO	NO	6	8		3
256	Malathy	28	7335	39+3	1	10	8	10	220	20	10	250	FTNVD	1		2.6	NO	NO	NO	NO	7	8		3
257	Suba	24	7350	38+4	1	10	10	7	270	21	17	308	OUTLET	1	FD	2.9	NO	NO	NO	NO	7	8		5
258	Anushya	25	7372	40+1	1	10	7	9	335	48	10	393	FTNVD	2		2.5	NO	NO	NO	NO	7	8		3
259	Reemarosi	25	7390	40+3	1	10	5	8	300	24	6	330	FTNVD	1		3	NO	NO	NO	NO	7	8		3
260	Vanitha	20	7400	39+2	2	10		9	280	20	10	310	FTNVD			2.7	NO	NO	NO	NO	7	9		3
261	Deivanayagi	23	7415	38+1	1	9	6	8	200	33	7	240	OUTLET	1	ME	3.5	NO	NO	NO	NO	7	8		5
262	Deepavalli	24	7433	38+2	1	10	6	9	260	15	10	285	FTNVD	1		2.8	NO	NO	NO	NO	7	8		3
263	Selvi	26	7448	39+6	1	9	6	10	230	20	10	260	FTNVD	1		2.7	NO	NO	NO	NO	7	7		8
264	Jothy	28	7460	38+2	1	9	6	9	260	15	5	280	FTNVD	1		2.3	NO	NO	NO	NO	8	7		3
265	Revathy	29	7495	38+6	1	9	7	10	240	35	5	280	FTNVD	1		2.75	NO	NO	NO	NO	7	7		8
266	Shanthy	22	7506	40+4	1	10	7	9	320	30	10	360	FTNVD	1		3.3	NO	NO	NO	NO	7	7		3
267	Elaiyarsi	20	7530	40+2	2	10		9	240	15	5	260	FTNVD			3.2	NO	NO	NO	NO	7	9		3
268	Sathya	20	7546	38+2	1	9	10	10	300	40	20	360	FTNVD			2.2	YES	NO	NO	NO	7	9		8
269	Megaladevi	23	7570	37+2	2	10		9	260	25	10	295	FTNVD			2.5	NO	NO	NO	NO	7	9		3
270	Manjula	26	7592	38+1	1	10	7	9	310	25	10	345	FTNVD	2		2.65	NO	NO	NO	NO	6	7		3
271	Usharani	25	7603	39+6	2	10		10	300	55	10	365	FTNVD			2.4	NO	NO	NO	NO	7	9		3
272	Suba	28	7620	41+4	1	8	7	7					LSCS	1	FD	2.6	NO	NO	NO	YES	7	8		8
273	Bhuvaneeshwari	29	7638	38+4	1	10	7	8	220	17	13	250	FTNVD	1		2.75	NO	NO	NO	NO	6	8		3
274	Kahar beevi	20	7650	38+2	1	9	10	8	360	38	12	410	FTNVD	2		2.55	NO	NO	NO	NO	7	8	VT	5
275	Ajantha	23	7778	39+5	2	10		10	240	28	12	280	FTNVD			2.4	NO	NO	NO	NO	7	9		3
276	Vimala	26	7709	38+2	2	10		9	300	19	13	332	FTNVD			2.7	NO	NO	NO	NO	7	8		3
277	Kalayarasi	20	7734	38+6	2	9		10	320	30	10	360	FTNVD			3.2	NO	NO	NO	NO	7	8		3
278	Kanimozhi	29	7790	39+5	1	10	10	10	200	20	10	230	OUTLET	1	ME	2.4	NO	NO	NO	NO	7	8		5
279	Rajavizhi	26	7793	39+6	1	8	7	10	180	25	10	215	FTNVD	1		3.2	NO	NO	NO	NO	7	8		3
280	Rajkumari	25	7799	38+1	2	10		9	360	26	14	400	FTNVD			3.2	NO	NO	NO	NO	7	7		3
281	Vembu	27	7712	39+5	1	9	10	9					LSCS	1	FD	3.2	YES	NO	NO	NO	7	8		8
282	Sarala	20	7738	38+5	2	9		10					LSCS		FD	2.2	NO	NO	NO	NO	7	8		8
283	Jeyanthi	19	7713	37+3	2	9		9	300	28	12	340	FTNVD			3.45	NO	NO	NO	NO	7	8	VT	5
284	Malathy	28	7715	39+2	1	10	8	7	360	20	10	390	FTNVD	1		2.95	YES	NO	NO	NO	7	8		3
285	Kavitha	26	7723	39+1	1	10	10	8	280	10	5	295	FTNVD	1		2.75	NO	NO	NO	NO	7	8		3
286	Vasanthy	25	7726	38+1	1	9	3	8	340	30	10	380	FTNVD	2		3.2	NO	NO	NO	NO	7	8		3
287	Indraleka	29	7789	38+3	2	9		10	220	10	10	240	FTNVD			2.75	NO	NO	NO	NO	7	8		3
288	Shanthy	28	7780	38+6	2	8		10	270	30	15	315	FTNVD			2.25	NO	NO	NO	NO	8	8	VT	5
289	Nalini	27	7765	39+2	1	9	4	10					LSCS	1	FD	2.9	NO	NO	NO	NO	7	8		8
290	Suriya	26	7745	38+6	2	9		9					LSCS		FD	2.6	NO	NO	NO	NO	6	8		8
291	jothylakshmi	22	7743	39+2	1	10	4	8	270	25	5	300	FTNVD	1		3.5	NO	NO	NO	NO	6	7		3
292	Revathy	24	7744	38+3	2	9		10					LSCS		FD	3.5	YES	NO	NO	NO	7	8		8
293	ganamani	23	7801	37+6	1	9	4	8					LSCS	1	FD	2.25	NO	NO	NO	NO	6	7		8
294	bhuvaneshwari	25	7888	38+5	2	10		9	260	24	6	290	FTNVD			2.75	NO	NO	NO	NO	7	8		3
295	jebila	18	3271	38+3	1	8	4	9					LSCS	1	FD	3.3	NO	NO	NO	NO	7	8		8
296	nadhiya	21	3528	39+1	2	10		10	240	25	10	275	FTNVD			3	NO	NO	NO	NO	7	8		3
297	bharathy	28	3529	38+4	2	10		9	310	17	5	332	FTNVD			2.8	YES	NO	NO	NO	7	7	VT	5
298	gayathri	25	3530	38+4	2	9		10					LSCS		FD	2.7	NO	NO	NO	NO	6	7		8
299	devi	28	3535	40	1	9	4	9	200	25	5	230	FTNVD	1		2.6	NO	NO	NO	NO	7	8		3
300	geetha	21	3559	38+6	1	10	4	7	320	60	10	390	FTNVD	1		3.5	NO	NO	NO	NO	7	8		3
301	sulochana	22	3562	38+4	2	9		9	400	25	5	430	FTNVD			3.6	NO	NO	NO	NO	7	7		3
302	sulthana	22	3557	39+4	1	9	8	10	240	12	8	260	FTNVD	1		3.45	NO	NO	NO	NO	8	9		3

201	Prabahavathy	21	6176	37+5	1	9	9	8	240	15	10	265	FTNVD	1		3	NO	NO	NO	NO	8	7		3
202	Janatha	26	6179	38+3	2	10		9	220	30	10	250	FTNVD			3	NO	NO	NO	NO	6	9		3
203	Sumathy	20	6180	39+6	1	9	9	9	260	10	10	280	FTNVD	1		3.2	NO	NO	NO	NO	8	7		3
204	Sridevi	19	6181	39	2	9		10	280	60	10	350	FTNVD			3	NO	NO	NO	NO	7	9		3
205	Muthulakshmi	23	6183	38+2	2	9		10	240	10	4	254	FTNVD			3.5	NO	NO	NO	NO	7	9		3
206	Malathy	26	6190	40+2	1	9	7	7	320	15	10	345	FTNVD	2		2.74	NO	NO	NO	NO	8	7		3
207	Kalyani	27	6203	40	1	9	7	9					LSCS	1	FD	2.6	NO	NO	NO	NO	8	7		8
208	Dhanapriya	28	6214	39+4	2	10		9					LSCS		FD	2.4	NO	NO	NO	NO	7	9		8
209	Gomathy	23	6321	39+3	2	10		10	280	63	7	350	FTNVD			2.75	NO	NO	NO	NO	6	9		3
210	Uma maheshwari	28	6527	39+2	2	10		10	270	33	7	310	FTNVD			3.1	NO	NO	NO	NO	6	9		3
211	Chitra	29	6666	39+2	1	9	9	10	250	23	10	283	FTNVD	1		2.8	NO	NO	NO	NO	8	7		3
212	Anita	26	6689	40+2	1	8	8	8	240	10	5	255	FTNVD	1		2.5	NO	NO	NO	NO	8	7		3
213	Vijaya	30	6693	39+1	2	9		9	280	20	5	305	FTNVD			2.4	YES	YES	NO	NO	6	9		3
214	Amudha	29	6721	38+2	1	9	8	10	420	65	15	500	FTNVD	2		2.76	NO	NO	NO	NO	8	7	VT	5
215	Sundari	24	6735	39	2	10		9	420	60	10	490	FTNVD			3	NO	NO	NO	NO	6	9		3
216	Rajavalli	21	6787	40+2	1	8	7	9	270	30	10	310	FTNVD	2		2.9	NO	NO	NO	NO	8	7		3
217	Selvarani	28	6793	40+1	2	10		9	200	20	8	228	FTNVD			2.5	NO	NO	NO	NO	6	9		3
218	Sudha sri	24	6800	39+4	1	10	7	8	280	21	8	309	FTNVD	1		2.54	NO	NO	NO	NO	8	7	VT	5
219	Kalaiselvi	27	6811	39+5	1	10	7	10	225	29	7	261	FTNVD	1		2.4	NO	NO	NO	NO	8	7		3
220	Kaviya	26	6821	39+6	1	10	7	7	220	20	8	248	FTNVD	1		2.8	NO	NO	NO	NO	8	7	VT	5
221	Kavin	25	6847	38+1	2	10		10	170	20	10	200	FTNVD			2.56	NO	NO	NO	NO	6	8		3
222	Hajima	20	6872	39+2	1	9	7	9	260	10	10	280	FTNVD	1		2.45	NO	NO	NO	NO	8	7		3
223	Mary	24	6894	38+1	2	10		9	280	60	10	350	FTNVD			2.8	NO	NO	NO	NO	6	7		3
224	Sheeba	26	6911	38+6	1	9	7	10	240	10	4	254	FTNVD	1		2.75	NO	NO	NO	NO	8	7		3
225	Lavanya	18	6932	38+4	1	9	9	8	320	15	10	345	FTNVD	1		3.4	NO	NO	NO	NO	8	8	VT	5
226	Pushpa	23	6941	40+5	2	10		10	300	20	10	330	FTNVD			2.8	NO	NO	NO	NO	6	8		3
227	Thangam	28	6952	40	2	10		10	200	15	5	220	FTNVD			3.1	NO	NO	NO	NO	6	8		5
228	Thamarai	24	6961	39+2	1	9	9	9	190	20	8	218	OUTLET	1	ME	2.8	NO	NO	NO	NO	8	9		5
229	Amritha	25	6972	39+2	2	10		10	280	38	10	328	FTNVD			2.5	NO	NO	NO	NO	7	8	VT	5
230	Deepa	21	6990	40+2	2	10		10	300	40	10	350	FTNVD			2.4	NO	NO	NO	NO	7	8		3
231	Mangayarkarasi	23	7005	39	1	9	3	10	220	30	5	255	FTNVD	1		2.9	NO	NO	NO	NO	6	8	VT	5
232	Kayalvizhi	18	7020	37	2	9		9					LSCS		FD	2.7	NO	NO	NO	NO	7	7		8
233	Jayanthi	28	7045	38	2	10		9	300	49	7	356	FTNVD			2.5	NO	NO	NO	NO	7	8		3
234	Nirmala	24	7060	39	2	10		9	420	40	10	470	FTNVD			3	NO	NO	NO	NO	6	9		3
235	Kanagavalli	27	7080	38+3	1	9	3	8	180	10	10	200	FTNVD	1		2.9	NO	NO	NO	NO	7	8		3
236	Selvi	31	7106	40+3	2	10		9	360	31	17	408	FTNVD			2.5	NO	NO	NO	NO	7	9		3
237	Parvathy	26	7025	39+5	2	9		9	280	24	12	316	FTNVD			2.6	NO	NO	NO	NO	7	9		3
238	Vatchala	21	7048	37+4	1	9	4	8	240	20	5	265	FTNVD	1		3	NO	NO	NO	NO	7	9		3
239	Simathy	26	7059	40+3	2	10		9	375	65	10	450	FTNVD			2.5	NO	NO	NO	NO	7	9		3
240	Dharani	27	7065	40	1	10	4	9	180	15	10	205	FTNVD	1		2.75	NO	NO	NO	NO	7	9		3
241	Nithya	25	7089	40+1	1	10	4	10	360	30	10	400	FTNVD	1		3.2	YES	NO	NO	NO	6	9		3
242	Vembu	29	7100	38+6	1	10	4	7	210	20	10	240	FTNVD	1		2.6	NO	NO	NO	NO	7	9		3
243	Sangeetha	21	7136	38+2	1	10	4	9	380	45	20	445	FTNVD	2		3	NO	NO	NO	NO	8	9		3
244	Vali	18	7145	40+6	1	10	4	8	380	28	10	418	OUTLET	2	FD	2.75	NO	NO	NO	NO	7	9		5
245	Arokyaselvi	20	7170	39+5	2	10		10	260	22	10	292	FTNVD			2.25	NO	NO	NO	NO	7	9		3
246	Krishnapriya	21	7185	38+2	2	10		10	400	38	18	456	FTNVD			3	NO	NO	NO	NO	6	9		3
247	Sudha	24	7205	40	1	10	4	10	420	40	10	470	FTNVD	2		2.8	NO	NO	NO	NO	6	9		3
248	Maheshwari	21	7215	38+5	1	9	4	8	320	46	8	374	FTNVD	2		2.9	NO	NO	NO	NO	7	9	VT	5
249	Subaselvi	18	7232	37+2	2	10		9	240	30	10	280	FTNVD			3.25	NO	NO	NO	NO	7	9		3
250	Rajeshwari	19	7240	38+1	1	10	3	10	290	26	5	321	FTNVD	1		2.9	NO	NO	NO	NO	8	9		3
251	Mehraj Begum	24	7265	40+2	1	10	9	9	280	20	10	310	FTNVD	1		2.8	YES	NO	NO	NO	7	9		3

150	Sivagami	25	5450	37+4	2	9		10	290	15	10	315	FTNVD			2.6	YES	NO	NO	NO	7	9		3
151	Sundari	22	5479	40+3	2	10		10	200	23	10	233	FTNVD			2.5	NO	NO	NO	NO	7	9		3
152	Kavitha	22	5498	39+6	1	9	6	9	190	20	10	220	FTNVD	1		2.75	NO	NO	NO	NO	6	9		8
153	Dhanalakshmi	22	5601	40+5	2	9		9	220	10	5	235	FTNVD			2.8	NO	NO	NO	NO	7	7	VT	5
154	Revathy	23	5638	39+8	1	9	7	8	240	23	7	270	FTNVD	1		2.6	NO	NO	NO	NO	8	8		3
155	Shyamaladevi	20	5646	39+2	1	9	8	10	200	20	10	230	FTNVD	1		2.9	YES	YES	NO	NO	6	8		3
156	Kolanji	23	5677	37+2	2	9		10	290	35	7	332	FTNVD			3.2	NO	NO	NO	NO	7	7		3
157	Sudha	22	5681	38+5	2	9		10	240	35	5	280	FTNVD			3.3	NO	NO	NO	NO	7	8		3
158	Elavarasi	21	5690	39+1	1	10	8	9	280	25	10	315	LSCS	2	FD	2.5	NO	NO	NO	NO	8	9		8
159	Amutha	25	5700	37	2	10		9	270	30	10	310	FTNVD			2.6	NO	NO	NO	NO	7	8		3
160	Jothy	23	5731	37+6	2	9		10	340	20	10	370	FTNVD			2.9	NO	NO	NO	NO	7	7		3
161	Sivagamasundari	22	5746	39+2	2	10		9	310	23	7	340	FTNVD			2.76	NO	NO	NO	NO	7	7		3
162	Shanthi	21	5755	39+2	1	9	9	9	280	27	10	317	FTNVD	2		2.51	NO	NO	NO	NO	8	9		3
163	Lavanya	19	5782	39+1	2	10		10	140	20	10	170	FTNVD			2.76	NO	NO	NO	NO	6	7		3
164	Bhuvaneshwari	25	5797	38+6	1	8	9	10					LSCS	1	FD	3	NO	NO	NO	NO	8	9		8
165	Devi	20	5824	37+4	2	10		9	400	50	10	460	FTNVD			2.7	NO	NO	NO	NO	7	7		3
166	Sathiya	22	5845	39+4	2	10		10	260	20	10	290	FTNVD			2.9	NO	NO	NO	NO	7	7		3
167	Hepziba	23	5872	37+5	1	8	7	8	250	18	7	275	FTNVD	1		2.7	NO	NO	NO	NO	8	9		3
168	Shylaja	19	5888	39+1	2	10		10	320	28	10	358	FTNVD			2.8	NO	NO	NO	NO	7	7		3
169	Shakeela	24	5897	39+6	1	10	3	8	180	10	4	194	FTNVD	1		2.9	NO	NO	NO	NO	8	9		3
170	Nameetha	27	5899	40+1	2	10		10	270	22	8	300	FTNVD			3.1	NO	NO	NO	NO	7	7		3
171	Maheshwari	27	5914	37+2	2	10		9	190	23	10	223	FTNVD			2.7	NO	NO	NO	NO	7	7	VT	5
172	Praveena banu	22	5934	39+1	1	9	3	7	300	29	14	343	FTNVD	1		2.9	NO	NO	NO	NO	8	9		3
173	Radhiga	21	5941	37+1	2	9		9	230	22	6	258	FTNVD			2.54	NO	NO	NO	NO	7	7		3
174	Pushpavalli	22	5973	39+1	1	10	4	10	250	15	5	270	FTNVD	1		2.9	NO	NO	NO	NO	6	9	VT	5
175	Jansi rani	25	5955	38+1	1	8	4	10	330	31	7	368	FTNVD	2		3.3	NO	NO	NO	NO	8	9		3
176	kalaiselvi	21	6124	40	1	10	9	9	230	23	5	258	FTNVD	1		2.9	NO	NO	NO	NO	8	8		3
177	rajalakshmi	27	6170	40	2	10		9	280	25	10	315	FTNVD			3.1	NO	NO	NO	NO	6	8		3
178	selvarani	25	6173	39	1	8	7	10	250	18	7	275	FTNVD	1		2.9	NO	NO	NO	NO	8	9		3
179	Jansi rani	23	6174	40	1	10	8	8	280	25	10	315	FTNVD	2		3.1	NO	NO	NO	NO	8	7		3
180	Vijayalakshmi	24	6090	41	2	9		9	190	20	8	218	FTNVD			2.8	NO	NO	NO	NO	6	8		3
181	vagitha	25	6900	40	2	9		9	220	10	5	235	FTNVD			2.9	NO	NO	NO	NO	7	8	VT	5
182	sivagangai	25	6097	38	1	9	7	10	240	23	7	270	FTNVD	1		3	NO	NO	NO	NO	8	8		3
183	sasikala	27	6098	39	1	9	8	7	200	20	10	230	OUTLET	1	ME	3.8	NO	NO	NO	NO	7	8		5
184	gangai	27	6091	40	2	9		9	302	30	5	337	FTNVD			2.2	NO	NO	NO	NO	6	7		3
185	devikarasi	20	6112	40	2	9		10	288	45	7	340	FTNVD			2.8	NO	NO	NO	NO	7	8		3
186	jayalakshmi	28	6132	37	2	9		10	412	25	6	443	FTNVD			2.5	NO	NO	NO	NO	7	8		3
187	jansirani	26	6134	38	1	10	7	9	550	20	7	577	FTNVD	2		2.6	NO	NO	NO	NO	8	8		3
188	manjuladevi	25	6135	38.5	2	9		9	306	18	10	328	FTNVD			3	NO	NO	NO	NO	7	8	VT	5
189	valamathy	23	6161	40	2	9		10	320	65	10	395	FTNVD			2.45	YES	NO	NO	NO	7	8		3
190	sumathy	22	6164	39	1	10	7	9	300	18	12	330	FTNVD	2		2.6	NO	NO	NO	NO	8	7		3
191	deepa	23	6153	41	2	9		9	320	25	5	350	FTNVD			2.76	NO	NO	NO	NO	7	8		3
192	deepthi	22	6157	40	1	8	8	10	200	15	5	220	FTNVD	1		3.1	NO	NO	NO	NO	8	7		3
193	mahalakshmi	23	6132	39	2	10		9	320	45	10	375	FTNVD			3.5	NO	NO	NO	NO	7	7		3
194	saritha	22	6137	38	1	10	7	10	200	18	10	228	FTNVD	1		2.8	YES	YES	NO	NO	6	7		3
195	rubini	21	6134	39	2	10		9	220	20	10	250	FTNVD			2.61	NO	NO	NO	NO	7	7		3
196	madhavi	28	6144	40	2	10		10	190	10	5	205	FTNVD			2.3	NO	NO	NO	NO	7	8		3
197	anandajothy	24	6145	38	1	9	9	8	180	15	5	200	FTNVD	1		2.54	NO	NO	NO	NO	8	7	VT	5
198	rajalakshmi	25	6147	38	2	10		10	260	10	5	275	FTNVD			2.7	NO	NO	NO	NO	7	9		3
199	arivuselvi	27	6149	39	2	10		10					LSCS		FD	2.9	NO	NO	NO	NO	6	9		8
200	uma	28	6166	40	2	10		10					LSCS		FD	2.5	NO	NO	NO	NO	6	9		8

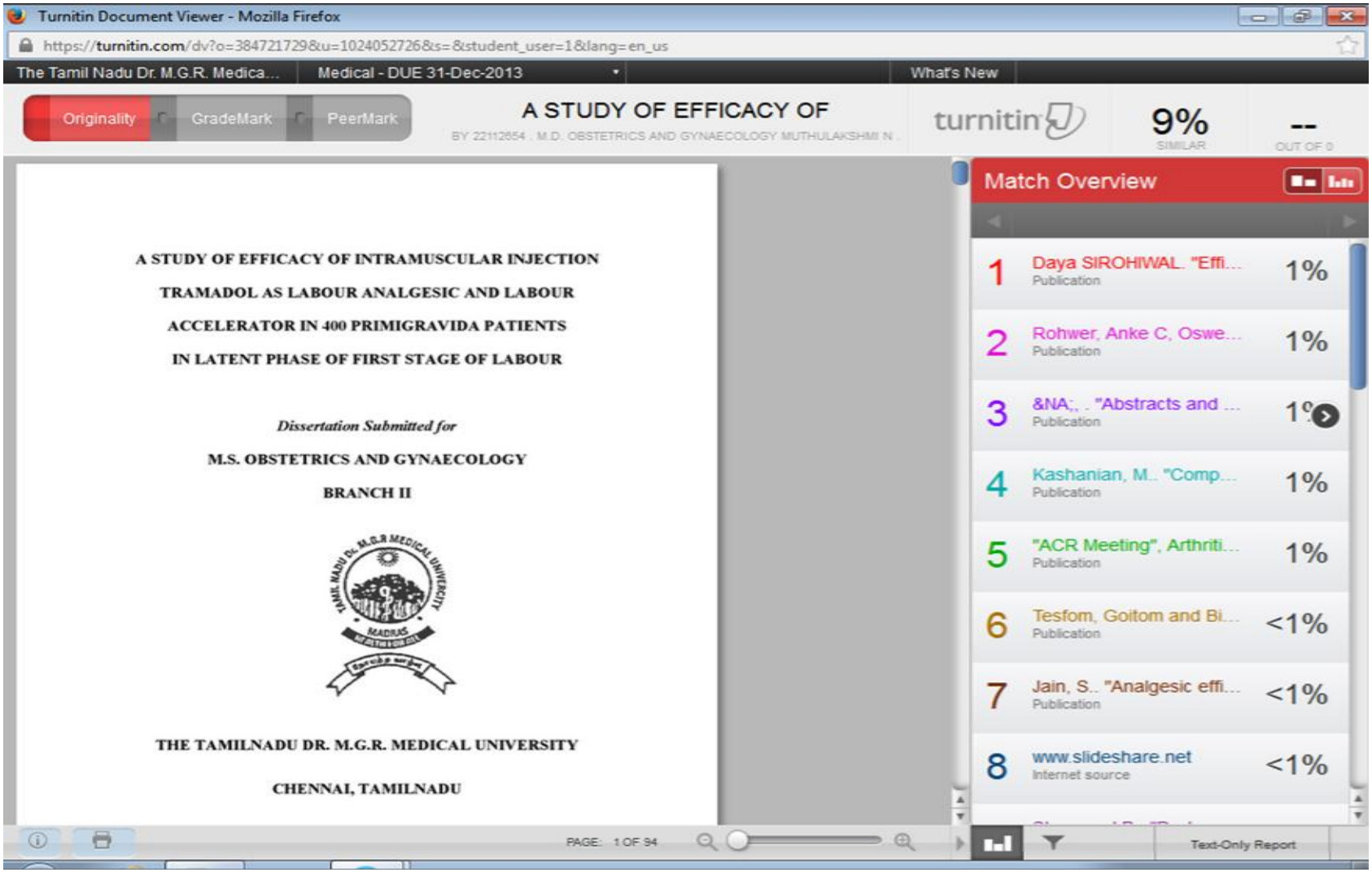
99	Rajeshwari	19	14515	38	1	10	9	7	230	22	6	258	FTNVD	1		3	NO	NO	NO	NO	7	8		3
100	Nadhiya	19	14528	39+4	2	10		9	250	15	5	270	FTNVD			3.12	NO	NO	NO	NO	7	8		3
101	Kalpana	25	4090	37+6	2	9		10	340	20	10	370	FTNVD			2.75	NO	NO	NO	NO	6	8		3
102	Saroja	24	4198	38	2	10		10	320	20	7	347	FTNVD			2.5	NO	NO	NO	NO	7	8		8
103	Latha	21	4367	38+3	2	10		9	360	30	10	400	FTNVD			3.2	NO	NO	NO	NO	7	8		3
104	Thangamani	24	4587	38+2	1	10	9	9	280	55	15	350	FTNVD	2		3.1	NO	NO	NO	NO	8	7		3
105	Malathy	25	4198	39+1	2	10		9	200	20	10	230	FTNVD			2.8	NO	NO	NO	NO	7	8		3
106	Umamaheshwari	20	4087	39+5	1	9	6	9	320	35	15	370	FTNVD	2		2.56	NO	NO	NO	NO	8	7		3
107	Vijayalakshmi	25	4659	40+5	2	10		10	280	23	7	310	FTNVD			3	NO	NO	NO	NO	6	8		3
108	Indira	25	4065	39+3	1	10	5	10	240	24	10	274	FTNVD	1		2.9	NO	NO	NO	NO	8	9		3
109	Seethalakshmi	22	4213	39+1	2	9		10	300	23	10	333	FTNVD			2.5	NO	NO	NO	NO	7	8	VT	5
110	Poovazhagi	23	4270	39+2	1	8	7	8	210	15	7	232	FTNVD	1		2.56	NO	NO	NO	NO	8	7		3
111	Vembu	28	4300	38+1	2	9		10	340	35	10	385	FTNVD			2.6	NO	NO	NO	NO	6	7		3
112	Sheela	30	4367	38+5	1	10	8	9	280	25	5	310	FTNVD	2		2.4	NO	NO	NO	NO	7	8		3
113	Senthamarai	32	4385	40	1	9	7	10	300	21	7	328	FTNVD	2		2.43	NO	NO	NO	NO	8	9		3
114	Vimala	30	4431	37+6	2	10		9	200	15	5	220	FTNVD			3.4	NO	NO	NO	NO	7	7	VT	5
115	Malliga	21	4475	38+5	2	9		9	190	20	8	218	OUTLET		ME	3	YES	NO	NO	NO	6	8		5
116	Sudha	20	4490	38+1	2	10		10	280	38	10	328	FTNVD			2.65	NO	NO	NO	NO	7	8		3
117	Amsavalli	22	4532	39+3	2	10		9	300	40	10	350	FTNVD			2.8	NO	NO	NO	NO	7	7		3
118	Pallavi	24	4594	39+1	1	10	9	7	180	20	5	205	FTNVD	1		2.45	NO	NO	NO	NO	8	8	VT	5
119	Karpagam	26	4612	39+1	1	9	8	9	210	25	10	245	FTNVD	1		2.6	NO	NO	NO	NO	8	8		3
120	Saridha	28	4637	38+5	2	8		9					LSCS		FD	2.76	NO	NO	NO	NO	7	7		8
121	Umadevi	30	4657	38+1	1	10	8	8	250	23	10	283	FTNVD	1		3.1	NO	NO	NO	NO	8	9		3
122	Revathy	19	4689	38+5	2	10		10	310	20	10	340	FTNVD			3.5	NO	NO	NO	NO	7	8	VT	5
123	Visalatchi	18	4609	38+1	1	9	9	10	250	20	7	277	FTNVD	1		2.8	NO	NO	NO	NO	7	8		3
124	Vembarasi	20	4700	39	1	9	8	9	200	15	5	220	OUTLET	1	ME	2.61	YES	NO	NO	NO	8	8		5
125	Marystella	23	4714	38+2	2	10		10	360	30	10	400	OUTLET		ME	2.3	NO	NO	NO	NO	7	8	VT	5
126	Indira	20	4724	39+2	2	10		9	290	30	10	330	FTNVD			2.54	NO	NO	NO	NO	7	7		3
127	Punitha	25	4745	39+5	2	10		10	320	20	10	350	FTNVD			2.7	NO	NO	NO	NO	7	8	VT	5
128	Chandra	25	4768	40+1	2	10		9	240	28	12	280	FTNVD			2.9	NO	NO	NO	NO	7	9		3
129	Elavarasi	25	4790	39+1	1	10	7	8	200	10	10	220	FTNVD	1		2.5	NO	NO	NO	NO	7	8	VT	5
130	Shanmuga priya	21	4801	38+3	1	7	6	10					LSCS	1	FD	3	YES	NO	NO	NO	7	9		8
131	Kavitha	23	4829	39+2	2	10		10	300	25	10	335	FTNVD			3	NO	NO	NO	NO	7	9	VT	5
132	Bhuvaneshwari	18	4834	38+1	2	10		9	180	25	10	215	FTNVD			3.2	NO	NO	NO	NO	8	9		3
133	Abirami	25	4855	38+6	1	8	6	8	360	45	15	420	OUTLET	2	ME	3.8	NO	NO	NO	NO	8	8		5
134	Devi	22	4871	39+1	2	10		10	280	30	10	320	FTNVD			3.5	NO	NO	NO	NO	6	9		3
135	Sangeetha	21	4899	38+2	1	8	7	9	320	30	10	360	FTNVD	2		2.74	NO	NO	NO	NO	8	8		3
136	Maheshwari	23	4900	39+1	1	9	9	7	240	31	13	284	FTNVD	1		2.6	NO	NO	NO	NO	8	9		3
137	Elamathy	22	4931	38+6	1	9	8	10	220	30	15	265	FTNVD	1		2.4	NO	NO	NO	NO	8	9		3
138	Ranjani	25	4942	39+2	1	10	9	9	270	24	8	302	FTNVD	1		2.75	NO	NO	NO	NO	8	9		3
139	Tamilarasi	25	4958	38+6	2	10		10	310	30	10	350	FTNVD			3.1	YES	NO	NO	NO	6	9		3
140	Nishanthi	20	4970	39+3	1	8	8	9					LSCS	1	FD	2.8	NO	NO	NO	NO	8	9		8
141	Mala	23	4985	39+1	2	10		10	320	20	5	345	FTNVD			2.5	YES	NO	NO	NO	6	9		3
142	Mahalakshmi	22	4999	39+6	2	9		9	210	25	10	245	FTNVD			2.4	NO	NO	NO	NO	6	9		3
143	Chandrakala	21	5000	39+2	1	8	9	8					LSCS	1	FD	2.76	NO	NO	NO	NO	8	9		8
144	Devi	18	5102	37+1	1	10	7	10	250	23	10	283	FTNVD	1		2.8	NO	NO	NO	NO	8	8		3
145	Kalaivani	24	5325	40	2	10		10	310	20	10	340	FTNVD			2.9	NO	NO	NO	NO	6	9		3
146	Jothy	25	5375	39+5	2	9		9	380	20	7	407	OUTLET		FD	3.5	NO	NO	NO	NO	7	9		5
147	Manimegalai	22	5413	38+3	1	9	6	10	240	30	10	280	FTNVD	1		3	NO	NO	NO	NO	7	8		3
148	Aboorvam	25	5454	37+2	2	10		9	290	23	17	230	FTNVD			3.4	NO	NO	NO	NO	6	9	VT	3
149	Senbagam	23	5467	39+3	1	8	6	8	150	10	5	165	FTNVD	1		3.2	NO	NO	NO	NO	8	9		3

48	Chandhini	25	14257	39+1	2	10		9	200	20	10	230	OUTLET		ME	2.4	NO	NO	NO	NO	7	8	VT	5
49	Kalaivani	22	14125	38+4	1	10	6	10	180	25	10	215	FTNVD	1		3.2	NO	NO	NO	NO	7	9		3
50	Asha	19	14212	38+4	2	10		10	360	26	14	400	FTNVD			3.2	NO	NO	NO	NO	7	8		3
51	Tamizhselvi	21	14190	40	1	7	7	9					LSCS	1	FD	3.2	YES	NO	NO	NO	7	9		8
52	Hemalatha	22	14254	38+6	2	8		9					LSCS		FD	2.2	NO	NO	NO	NO	7	8		8
53	Nithya	31	14272	38+4	2	9		9	300	28	12	340	FTNVD			3.45	NO	NO	NO	NO	7	8	VT	5
54	Sasikala	26	14302	39+4	2	10		10	360	20	10	390	FTNVD			2.95	YES	NO	NO	NO	7	9		3
55	Krishnaveni	21	14311	39+4	1	10	8	9	280	10	5	295	FTNVD	1		2.75	NO	NO	NO	NO	7	8		3
56	Amudha	31	14271	38+6	1	10	8	7	340	30	10	380	FTNVD	2		3.2	NO	NO	NO	NO	7	9		3
57	Sammu	20	14313	37+1	2	8		9	220	10	10	240	FTNVD			2.75	NO	NO	NO	NO	7	9		3
58	Yuvaranjini	37	14323	39+2	2	8		10	270	30	15	315	FTNVD			2.25	NO	NO	NO	NO	8	9		3
59	Poornima	32	14319	40+5	2	8		9					LSCS		FD	2.9	NO	NO	NO	NO	7	9		8
60	Santhakumari	34	14229	38+1	1	7	7	10					LSCS	1	FD	2.6	NO	NO	NO	NO	7	9		8
61	Tejashree	36	14233	40+1	2	10		10	270	25	5	300	FTNVD			3.5	NO	NO	NO	NO	8	9		3
62	Gayathri	23	14304	37+3	2	8		9					LSCS		FD	3.5	YES	NO	NO	NO	7	9		8
63	Jeevarathinam	26	14361	39+5	2	8		10					LSCS		FD	2.25	NO	NO	NO	NO	6	9		8
64	Jameela	31	14315	39+4	2	10		10	260	24	6	290	FTNVD			2.75	NO	NO	NO	NO	7	9		3
65	Rajeshwari	36	14326	38+6	1	6	8	8					LSCS	1	FD	3.3	NO	NO	NO	NO	7	8		8
66	Kalaiselvi	33	14360	39+1	1	10	2	10	240	25	10	275	FTNVD	1		3	NO	NO	NO	NO	7	8		3
67	Vasanthi	19	14337	38+2	2	10		9	310	17	5	332	FTNVD			2.8	YES	NO	NO	NO	7	9		3
68	Ruckmani	22	14380	37+2	2	8		9					LSCS		FD	2.7	NO	NO	NO	NO	6	9		8
69	Umamaheshwari	18	14332	37+6	1	9	3	7	200	25	5	230	FTNVD	1		2.6	NO	NO	NO	NO	7	8		3
70	Priyanka	20	14367	39+2	2	10		9	320	60	10	390	FTNVD			3.5	NO	NO	NO	NO	7	9		3
71	Bakyalakshmi	18	14345	37+2	2	10		9	400	25	5	430	FTNVD			3.7	NO	NO	NO	NO	7	9		3
72	Kavitha	19	14382	38+4	1	9	4	9	240	12	8	260	FTNVD	1		3.45	NO	NO	NO	NO	8	9		3
73	Nandhini	22	14383	38+4	2	10		10	280	30	7	317	FTNVD			3	NO	NO	NO	NO	6	9	VT	5
74	Priya	19	14312	38+4	1	9	3	9	220	25	10	255	FTNVD	1		2.2	NO	NO	NO	NO	8	8	VT	5
75	Lalitha	22	14167	38+6	2	8		9	280	15	10	305	FTNVD			2.75	NO	NO	NO	NO	6	7		3
76	Manjula	23	14376	40+2	1	9	3	8	290	13	5	308	FTNVD	1		2.8	NO	NO	NO	NO	7	8		3
77	Jeyanthi	19	14393	37+2	2	8		10	300	18	12	330	FTNVD			2.75	NO	NO	NO	NO	8	8		3
78	Shanthi	36	14410	39	1	10	4	10	200	10	5	215	FTNVD	1		3.2	NO	NO	NO	NO	8	7		3
79	Swathi	24	14338	38+2	1	10	10	8	180	10	4	194	FTNVD	1		3.5	YES	NO	NO	NO	7	9		3
80	Jayanthi	20	14082	39+4	2	10		10	320	25	5	350	FTNVD			2.3	NO	NO	NO	NO	7	8		3
81	Yuvarani	23	14395	37+2	1	10	9	9	280	30	10	320	FTNVD	2		2.5	NO	NO	NO	NO	7	8	VT	5
82	Tamil arasi	23	14388	40	2	10		9	290	18	5	313	FTNVD			2.8	NO	NO	NO	NO	7	8		3
83	Sayeed suleka	18	14450	39+1	2	10		9	280	15	5	300	FTNVD			2.7	NO	NO	NO	NO	7	8		3
84	Banu	23	14392	38+2	1	9	8	7	270	15	5	290	FTNVD	1		3.3	NO	NO	NO	NO	7	8		3
85	Sangeetha	20	14237	39+1	2	10		10	320	65	10	395	FTNVD			3.2	NO	NO	NO	NO	6	7		3
86	Nafisa	22	14122	37+5	2	8		9	300	18	12	330	FTNVD			2.6	YES	NO	NO	NO	7	8		3
87	Sasikala	21	14482	38+3	2	10		10	320	25	5	350	FTNVD			2.9	NO	NO	NO	NO	6	7		3
88	Gayathri	21	14172	39+6	1	10	3	10	200	15	5	220	OUTLET	1	FD	3.8	NO	NO	NO	NO	8	8	VT	5
89	Nirosha	22	14469	39	2	10		9	320	45	10	375	FTNVD			2.55	NO	NO	NO	NO	6	8	VT	5
90	Eshwari	30	14230	38+2	1	10	4	8	200	18	10	228	FTNVD	1		3.2	NO	NO	NO	NO	7	8		3
91	Ponni	20	14330	40+2	2	10		10	300	44	18	362	FTNVD			2.7	NO	NO	NO	NO	7	8		3
92	Yuganya	23	14504	40	2	9		10	280	15	5	300	FTNVD			3.1	NO	NO	NO	NO	7	8		3
93	Priya	22	14325	39+4	2	10		10	210	21	7	238	FTNVD			2.56	NO	NO	NO	NO	8	8	VT	5
94	Amalakrishnan	21	14487	39+3	1	9	7	9	300	18	6	324	FTNVD	2		2.8	NO	NO	NO	NO	8	8		3
95	Rani	25	14474	39+2	2	9		10	230	32	10	272	FTNVD			3.5	NO	NO	NO	NO	6	7		3
96	Dhanalakshmi	20	14484	39+2	2	10		9	200	20	5	225	FTNVD			2.55	YES	NO	NO	NO	7	8		3
97	Tamil selvi	20	14500	40+2	1	9	9	10	190	23	10	223	OUTLET	1	ME	3.75	NO	NO	NO	NO	7	9	VT	5
98	Kanaga	23	14507	39+1	2	9		10	300	29	14	343	FTNVD			2.98	NO	NO	NO	NO	7	8		3

s.no	NAME	AGE	IPNO	GA	GROUP	DOPS1	DOPS1AF	DOPS2	DOLST1	DOLST2	DOLST3	DOLTOT	MOD	DOSE	IND	BWT	NA/VOM	DROW	PALPI	RD	APG1	APG5	MC	HS
1	Nagavalli	21	14093	39+4	1	9	4	10	220	30	5	255	FTNVD	1		2.9	NO	NO	NO	NO	6	8		3
2	Divya	20	14101	39+6	2	8		9					LSCS		FD	2.7	NO	NO	NO	NO	7	9		8
3	Thilagavathy	20	14112	37+2	1	10	4	7	300	49	7	356	FTNVD	2		2.1	NO	NO	NO	NO	7	8		3
4	Jayasudha	21	14079	38+1	2	10		9	420	40	10	470	FTNVD			3	NO	NO	NO	NO	7	9		3
5	Jeevarathinam	23	14079	39+2	1	9	8	10	180	10	10	200	FTNVD	1		2.1	NO	NO	NO	NO	7	8		3
6	Nalini	24	14103	37+3	2	10		10	360	31	17	408	FTNVD			2.5	NO	NO	NO	NO	7	8		3
7	Devi	25	14062	38+4	2	9		9	280	24	12	316	FTNVD			2.6	NO	NO	NO	NO	7	8		3
8	Bakyalakshmi	20	13904	40	1	9	4	8	240	20	5	265	FTNVD	1		3	NO	NO	NO	NO	7	8		3
9	shamsath	20	14065	39+3	2	10		9	375	65	10	450	FTNVD			2.5	NO	NO	NO	NO	7	7		3
10	Thulasi	20	14009	39+4	1	9	4	8	180	15	10	205	FTNVD	1		2.75	NO	NO	NO	NO	7	8		3
11	Parimala	19	14087	38+5	2	10		10	360	30	10	400	FTNVD			3.2	YES	NO	NO	NO	6	7		3
12	Sudha	22	14110	39+2	1	9	4	10	210	20	10	240	FTNVD	1		2.6	NO	NO	NO	NO	7	8		3
13	Pushpalatha	20	14156	39+2	1	8	7	9	380	45	20	445	FTNVD	2		3	NO	NO	NO	NO	8	8		3
14	Durgadevi	22	14155	38+3	2	10		9	380	28	10	418	OUTLET		FD	2.75	NO	NO	NO	NO	7	7	VT	5
15	Thirushanthi	21	14129	38+4	1	9	7	7	260	22	10	292	FTNVD	1		2.25	NO	NO	NO	NO	7	8		3
16	Nirosha	24	14123	38+5	2	10		10	400	38	18	456	FTNVD			3	NO	NO	NO	NO	6	7		3
17	Seetha	20	14137	37+5	1	6	7	7	420	40	10	470	FTNVD	2		2.4	NO	NO	NO	NO	6	7		3
18	Bhavani	25	14135	39+2	1	9	9	10	320	46	8	374	FTNVD	2		2.9	NO	NO	NO	NO	7	8	VT	5
19	Yamini	19	14129	37+3	2	10		10	240	30	10	280	FTNVD			3.25	NO	NO	NO	NO	7	7		3
20	Riyana	20	14109	39	1	10	4	8	290	26	5	321	FTNVD	1		2.9	NO	NO	NO	NO	8	7	VT	5
21	Rajeshwari	25	14176	39+2	2	10		10	280	20	10	310	FTNVD			2.8	YES	NO	NO	NO	7	7		3
22	Saranya	21	14116	39+2	1	9	4	8	320	65	10	395	FTNVD	2		3	NO	NO	NO	NO	8	7		3
23	Manjula	26	14163	39+5	1	8	4	7	240	19	7	266	FTNVD	1		2.75	NO	NO	NO	NO	7	7		3
24	Suma banu	21	13810	39+2	1	6	5	9					LSCS	1	FD	2.4	NO	NO	NO	NO	7	7		8
25	Rajeshwari	22	14178	39+4	1	10	5	7	200	26	8	234	FTNVD	1		2.65	NO	NO	NO	NO	6	7	VT	5
26	Radha	21	14099	39+2	1	10	7	10	220	20	10	250	FTNVD	1		2.6	NO	NO	NO	NO	7	8		3
27	Altina	26	14186	39+5	2	10		9	270	21	17	308	OUTLET		FD	2.9	NO	NO	NO	NO	7	7		5
28	Anandhi	29	14111	38+2	2	10		10	335	48	10	393	FTNVD			2.5	NO	NO	NO	NO	7	7		3
29	Naveena	29	14132	38+6	2	10		10	300	24	6	330	FTNVD			3	NO	NO	NO	NO	7	7	VT	5
30	Yamini	27	13925	39+5	1	9	4	9	280	20	10	310	FTNVD	1		2.7	NO	NO	NO	NO	7	8		3
31	Lavanya	26	14170	39+6	1	9	4	8	200	33	7	240	OUTLET	1	ME	3.5	NO	NO	NO	NO	7	8	VT	5
32	Nagma begum	30	13923	38+1	1	9	4	10	260	15	10	285	FTNVD	1		2.8	NO	NO	NO	NO	7	8		3
33	Tamizhselvi	19	14220	39+5	1	9	4	7	230	20	10	260	FTNVD	1		2.4	NO	NO	NO	NO	7	8		3
34	Divya	34	14194	38+5	2	9		9	260	15	5	280	FTNVD			2.3	NO	NO	NO	NO	6	7		3
35	Sreemathi	22	14221	37+3	1	9	6	8	240	35	5	280	FTNVD	1		2.75	NO	NO	NO	NO	7	8		3
36	Mahadevi	34	14158	39+2	2	10		9	320	30	10	360	FTNVD			3.3	NO	NO	NO	NO	7	7		3
37	Surya	33	13871	39+1	2	10		9	240	15	5	260	FTNVD			3.2	NO	NO	NO	NO	7	8		3
38	Ramya	32	13638	38+1	1	9	7	10	300	40	20	360	FTNVD	2		2.1	YES	NO	NO	NO	7	9		3
39	Theresa	28	14223	38+3	2	10		9	260	25	10	295	FTNVD			2.5	NO	NO	NO	NO	7	8		3
40	Latha	19	14222	38+6	1	10	8	9	310	25	10	345	FTNVD	2		2.65	NO	NO	NO	NO	6	7		3
41	Sathya	22	14235	39+2	2	10		10	300	55	10	365	FTNVD			2.4	NO	NO	NO	NO	7	8		3
42	Laila	19	14229	38+6	2	9		10					LSCS		FD	2.6	NO	NO	NO	YES	7	8		8
43	Chandralekha	23	13103	39+2	1	10	10	9	220	17	13	250	FTNVD	1		2.75	NO	NO	NO	NO	7	7		3
44	Rihana	33	14234	38+3	1	9	7	10	360	38	12	410	FTNVD	2		2.55	NO	NO	NO	NO	7	8		3
45	Mahalakshmi	20	14248	37+6	2	10		10	240	28	12	280	FTNVD			2.4	NO	NO	NO	NO	7	8		3
46	Parameshwari	31	14253	38+5	1	10	4	7	300	19	13	332	FTNVD	2		2.7	NO	NO	NO	NO	7	8		3
47	Anuradha	32	14243	38+3	1	9	4	8	320	30	10	360	FTNVD	2		3.2	NO	NO	NO	NO	7	8		3

KEY TO MASTER CHART

No.	CODE	NAME OF VARIABLE
1	S.no	Serial number
2	NAME	Names of cases
3	AGE	Ages in years
4	GA	Gestational Age
5	GROUP	Group 1-Study Group 2-control
6	DOPS1	Degree Of Pain Stage 1
7	DOPS1AF	Degree Of Pain Stage 1 After drug in study group
8	DOPS2	Degree Of Pain Stage 2
9	DOLST1	Duration Of Labour Stage 1
10	DOLST2	Duration Of Labour Stage 2
11	DOLST3	Duration Of Labour Stage 3
12	DOLTOT	Duration Of Labour Total
13	MOD	Mode of delivery
14	IND	Indications for LSCS and forceps
15	BWT	Birth weight
16	NA/VOM	Nausea,Vomiting
17	DROW	Drowsiness
18	PALPI	Palpitation
19	RD	Respiratory Distress
20	APG1	Apgar 1 minute
21	APG5	Apgar 5 minute
22	MC	Maternal complication
23	HS	Hospital Stay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ஒப்புதல் படிவம்

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என்ற விலாசத்தில் வசிக்கும் நான், எனக்கு அளிக்கப்பட்ட தகவல் படிவத்தில் உள்ள விவரங்களை படித்தும், கேட்டும் புரிந்து கொண்டேன்.

இந்த ஆய்விற்கு தேவையான மருந்தினை ஊசி மூலம் செலுத்திக்கொள்ள சம்மதிக்கிறேன்.

ஆய்வின் முடிவினை சொந்த அடையாளங்களை வெளியிடாமல் மருத்துவ ஆராய்ச்சிக்காக பயன்படுத்திக் கொள்ள சம்மதிக்கிறேன்.

நாள் : கையொப்பம்

இடம் : பெயர்

தகவல் படிவம்

ஸ்டான்லி மருத்துவமனையின் ஆர். எஸ். ஆர். எம். மருத்துவமனையில் மகப்பேறு மற்றும் பெண்கள் நல மருத்துவ துறையில் மேற்கொள்ளப்படும் ஆய்வு தொடர்பான தகவல் படிவம் இது.

இந்த ஆய்வு அனுபவம் வாய்ந்த மருத்துவர்களின் உதவியோடு நடத்தப்படுகிறது.

கர்ப்பிணி பெண்களுக்கு பிரசவ வலி ஏற்பட்ட பிறகு, வலி குறைவதற்கும், பிரசவம் விரைவாக நிகழ்வதற்கும் ஊசி மூலம் ஒரு மருந்தினை செலுத்தி அதன் ஆற்றலை கண்டறியும் ஆய்வு இது.

இதன் மூலம் பிரசவத்தின் பொழுது ஏற்படும் வலியும், பிரசவத்திற்கான நேரமும் குறைகின்றன என்பதனை பல்வேறு ஆய்வுகள் கூறுகின்றன.

எனவே இந்த ஆய்வினை இந்த மருத்துவமனையில் கர்ப்பிணி பெண்களுக்கு மேற்கொண்டு ஊசி மூலம் ட்ரமடால் (Tramadol) என்ற மருந்தினை கொடுத்து பிரசவ வலி மற்றும் பிரசவத்திற்கான நேரம் குறைவதும், அதன் மூலம் இம்மருந்தின் ஆற்றலும், கண்டறியபடுகிறது.

இந்த மருந்திற்கு எந்தவித பின்விளைவுகளும் இல்லை. தாய்க்கும் சேய்க்கும் இந்த மருந்து பாதுகாப்பானது.

இந்த ஆய்வு கர்ப்பிணி பெண்கள் தங்கள் சுய விருப்பத்துடன் முன்வந்தால் மட்டுமே மேற்கொள்ளப்படும்.